

CHEMICAL MARKETS

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Disturbing Elements

UNCERTAINTY lies like a quicksand under the foundations of our chemical price structure. It has all of the unsatisfactory characteristics proverbially associated with such a building site, and at the present time, under the present business conditions, it threatens to become a dangerous menace against price stability.

LEADERS of the industry to a man believe that the 1931 demand for chemicals will be greater than it has been during 1930; but there is great uncertainty as to how great that demand will become and when the consuming industries will increase their withdrawals. Planning a chemical production schedule to balance these two variable uncertainties is a nerve-wracking task.

BUT this market uncertainty is not the only unknown quantity with which the industry is wrestling. In fact, uncertainty as to costs and as to the stocks on hand are at the moment even more disturbing elements. They grip particularly the production man and the sales manager.

IT IS instinct with every production man worth his salt to aim steadily at lower costs and he measures his own accomplishment by this result. He believes firmly that "our costs are well below competition" and any curtail-

ment of operations, which inevitably must ruin his own cost estimates, is to him anathema. He naturally proposes that lower prices ought enable the sales department to take advantage of "our lower costs" and so at once maintain production and sustain profits.

EVERY good salesman believes firmly in volume of business and he watches the curve of sales, which in dollars and in tons must ever creep upwards. Every curtailed or delayed shipment order; every rumor of a lower price; every salesman's report instills in his mind suspicion of his competitors. To him a lost contract is a threat, and a cut price, a promise.

THESE perfectly human reactions of our production managers and our sales managers to the uncertainties of the present situation introduce a very disturbing element into the higher councils of the industry. Unlike the steel industry we have no recognized leaders who are looked to to set the price pace, and it is dangerously easy to turn what has been the steady, orderly decline in chemical prices which has been going steadily on since 1920 into a route. Keeping the feet of their department heads firmly on solid ground is going to be quite the most serious responsibility of our major executives during the next three months.



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Wages

A lot of well-meaning, but ill-thought-out philosophy is being foisted on the American business man at the present time and a number among his own ranks are the worst offenders. Wages are a relative matter based on the cost of production on the one hand and possible sales price on the other. To maintain that high wages should continue to be paid indiscriminately without due regard to these factors is simply inviting manufacturers to commit business suicide. The plea of course is made that by holding the wage scale to the 1929 figures the purchasing power of the country will shortly raise business conditions back to the level of a year ago. This is only a half-truth. Proponents of the idea seem to think that business depressions are matters of one or two weeks' duration. By this time the folly of such reasoning should be very apparent.

Manufacturers are perfectly correct in hesitating to produce merchandise in large quantities using labor at wages which prohibit the sale of it at a profit. Wages and commodity prices, manufacturing costs and selling prices, profit and loss are merely spokes in the large wheel that makes business go round and to enlarge one spoke without due regard for the others is merely to throw the entire mechanism out of line and create disorder.

Statistics

Facetiously it has been said that while figures do not lie, liars will figure. Physicians disagree in simultaneous examinations of patients, psychoanalysts are found on both sides of every celebrated murder case, students of economics are divided between free trade and protection and their conclusions drawn from duplicate statistics are often not in accord.

Figures and statistics are but a means to an end. Every high school student has proven that one equals two. Unless the major and minor premises are alike logic ceases to be an exact science and often becomes a tool of the individual's personal beliefs and prejudices. Subject to serious limitations, figures, of themselves, are not certain arbiters of absolute finality, and so with an age-long adage in mind we accept them "with a grain of salt."

Nevertheless we must appreciate the rapid advancement that has been made in the last few years in the compilation of business statistics and the ease of ready access afforded

to the executive of to-day. Modern mariners would not dare to move our liners from their docks without a chart in the wheelhouse and yet captains of mighty business crafts sail in many cases in dangerous shoal water scornful of the charts now available. Is it any wonder then that the wreckage in times such as this pile high on the shore; that the "Lloyd's" registers of business, Dun or Bradstreet, week after week record thousands of names high and dry on the reefs of over-production and ruinous prices. Resort to statistics is not an admission of weakness but rather an indication of strength.

The heyday of O. Henry's skippers is past. In their place has arisen new masters of the sea, scientifically trained and armed with charts they thoroughly know how to employ. Less picturesque perhaps, but certainly more efficient. Modern conception of business demands with equal exactitude a full understanding and a thorough application of statistics correctly arrived at.

Patent Medicine

There is a serious, growing tendency in some quarters to suggest plainly paternalistic "cure-alls" for alleviating personal distress resulting from industrial depression. Widespread prominence is being given to unemployment insurance at public expense. Budget purchases sounds much more dignified than buying on time but if there is any essential difference between them we fail to note it. Unemployment insurance is the English "dole" system dressed up in a frock coat and a high hat trying to masquerade under the guise of respectability.

There are not a few in this country who shudder when the name Soviet is mentioned and yet in all seriousness they do not hesitate to offer solutions that might easily be mistaken for propaganda originating from the "Kremlin" slightly sugar-coated to make them more acceptable. Evidently the idea is to not let the right hand know what the left hand is doing.

The viciousness and utter futility of governmental subsidies for the unemployed has been amply demonstrated in England. What utter folly it would be to substitute a dole under any name for American individuality and initiative. Ex-president Coolidge sums it up very well when he says, "The entire progress of our wage earners is toward full co-operation and partnership. They have been raised to a new dignity and must themselves assume new responsibilities."

When the canting and tinkering of those afflicted with half-baked unsound economic theories stops perhaps the voices of those advocating practices based on proven economic law will cease to be like the voices of the prophets of old, crying in the wilderness.

Strange as it may seem it is quite evident that a statement of some of these basic principles is necessary at this time. The idea of an honest day's work for a fair wage requires thought by both labor and capital as does the fact that wages cannot be paid indefinitely out of unprofitable business.

Writers on current conditions are continually drawing attention to similarities in present conditions with former periods of depression. One of the dissimilarities which needs to be pointed out is that in years gone by American initiative and will to work was relied on solely to end such conditions. Today those who still have both feet on the ground are being handicapped and impeded by a host of others bent on substituting prescriptions compounded principally of governmental interference in business. Let us get rid of the "patent medicine", forget the dyspepsia and go to work.

Quotation Marks

Unemployment would be relieved and business stimulated if corporations would distribute their surpluses to the stockholders to whom they belong. To hold large surpluses at a time of business emergency is to stand in the way of a revival of business activity.—Kenneth C. Hogate, Dow, Jones & Co.

It has been pointed out frequently in recent months by students of business statistics that increased industrial activity normally precedes advancing commodity prices in periods of business recovery. Virtually all such experts are in agreement, however, that a flattening out of the commodity price curve must come first. The August figures of the Bureau of Labor Statistics hold out the first definite and tangible hope yet offered that we may at last be witnessing this long delayed process.—*New York Herald Tribune*.

There are projects of nation-wide organization and development in transportation, communication, waterways, highways and electric lines waiting for a little more confidence and stability. They will furnish employment for a large amount of our surplus labor and capital. A country that has been able to make such progress ought to look at temporary readjustment without undue discouragement. The permanent factors of future advance appear secure.—*Calvin Coolidge*.

Thus the regulations attempt to push upon the manufacturers the responsibility for proper denatur-

ants in the alcohol. A problem that the department has been unable to solve for over ten years is handed to the manufacturers with the demand that they guarantee to solve it or they get no alcohol. The regulations further provide for the inspection of plants by any peace officer of any state subdivision, meaning that even the town constable can completely inspect plants, processes, formulas, and records of any alcohol consumer.—*Drug Markets*.

The practice of getting bids becomes alarming only when the buyer makes no proper discrimination between the reputation, ability, and facilities of several proposed sources of supply, or when the specifications, inspection, or the acceptance of delivery is such that he loses sight of quality and consequently does not keep his bidders on an equal basis. There is room for objection on another ground—namely, when the business of bidding is so frightfully overdone, as is the case with some educational institutions. When a buyer sends an itemized list requesting bids from at least sixty-two different establishments, we feel it is time to call attention to the abuse of the system.—*Industrial and Engineering Chemistry*.

There is something almost human in these periodical vacations of business which we call business depressions. Exhausted from its energy, tired from its efforts to succeed, weary of its constant activities, business decides to take a vacation and to rest awhile. This lethargy of business is simply the lethargy of those who control it.

Business as an entity does not exist, It is the expression of the energy of man, and its strength or weakness is but a reflection of the strength or weakness of those who activate it.—*Textile Colorist*.

When the predicted upturn in business conditions develops, it is likely the movement will be along sane lines. Purchasers probably will not buy in excess of their requirements, even though their supplies of material is at a minimum. It will require a revival of confidence all around the country to bring about a sustained increase in general business. Thus far confidence is not in evidence, although most interests apparently are quite hopeful regarding the immediate future.—*Wall Street Journal*.

Fifteen Years Ago

(From our issues of October 1915)

Van Schaack Brothers Chemical Works was organized in Chicago.

Dow Chemical Co. increased capital stock from \$1,500,000 to \$3,000,000 and distributed the additional stock in the form of a stock dividend.

William Zinsser & Co. was incorporated in New York with capital of \$100,000.

Monsanto Chemical Works began construction of a \$60,000 plant annex.

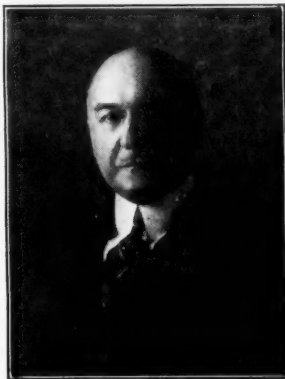
Pierre S. du Pont Wins Chemical Markets Medal

PIERRE S. DU PONT chairman of the Board of E. I. du Pont de Nemours & Company, was declared the first recipient of the Chemical Markets Medal at the meeting of our Consulting Board of Editors held September 15th at the Yale Club, when the ballots were counted.

By the vote of our readers—his competitors and contemporaries—Mr. du Pont's outstanding economic services to the entire group of the American chemical industries was acknowledged and awarded. They have chosen him the business man of the industry whom they judge to have made the most notable contribution to its remarkable advancement. This medal is the industry's own public pronouncement of its debt to his able leadership.

John J. Raskob, in seconding the nomination of Mr. du Pont for this award, defined the qualifications required to render distinguished economic service to an industry, as background, personality, perseverance, organizing ability, clear vision, and capital. The chemical industry by their decision have set Pierre S. du Pont apart as the one in whom these qualifications are to be found in a marked degree.

Mr. du Pont's services to the chemical industry have been very broad. As a chemist, as an executive, and as a financier he has contributed to its knowledge, its growth and its prosperity. Mr. Raskob, long intimate friend and business associate of the first CHEMICAL MARKETS medalist, is best equipped to speak authoritatively on his achievements: "Before Pierre S. du Pont became the executive head of the company he had done notable work in the development of smokeless powders and was deeply interested in the various steps through which the company became the leader in the manufacture of modern explosives and of allied pyroxylin materials. Then came the World War which found him, as president of his company burdened with the complex problems of expanding to meet an unprecedented demand for munitions. But much more was accomplished than the mere supplying of this need. A great chemical personnel was built up ready and able, even before hostilities ceased, to serve chemical problems of such magnitude as the world had



Eldest of three brothers, born in Wilmington, Jan. 15, 1870, he attended Penn Charter School, and Massachusetts Institute of Technology (B. S. 1890) and has received honorary LL.D. from Lafayette and Delaware. He began business as a chemist with Du Pont 1890; and assistant superintendent smokeless powder works, 1892; chemist, Johnson Co., Lorain, O., 1899; Du Pont Co. treasurer, 1902; president, 1915-1919; chairman, since 1915; and chairman, General Motors Corp.

never faced. Mr. du Pont gives the credit for the success of his administration to his associates, but the fact remains that the organization is imbued with his spirit and keen to materialize his visions of future greatness."

The executive and financial leadership by which Mr. du Pont has brought the company which he commands to its present position as the largest and one of the most diversified chemical enterprises in America typifies splendidly the work which the active executive in chemical fields does both for the science and the industry. It is exactly the type of economic service to our chemical industries which this medal is planned to award.

The conspicuous lack of any such appropriate public recognition of our executives' contributions to our industry's progress prompted the thought of the publisher of CHEMICAL MARKETS that such an award would be a most fitting way of celebrating the fifteenth birthday of this paper, and the tenth anniversary of its publication under his ownership and management. This suggestion was submitted to our Consulting Board of Editors who approved heartily and worked out the details. It was their careful judgment, that no committee, no scientific society, no trade association could so disinterestedly and becomingly select our leading chemical industrialist as could his own fellow executives in the industry. Accordingly, the readers of CHEMICAL MARKETS were given the opportunity, first of nominating five executives for this honor, then from these five selecting by secret ballot the one who in their estimation was most worthy of this award.

The wisdom of entrusting so important a selection to a consensus of the industry's own opinion was fully justified by the five men nominated for the medal. Not a one of them but what richly deserves the honor of recognition from the industry for these services that they have rendered to the cause of chemistry in American business. Our chemical industry has expanded in two decades from a very minor position to one of world-wide importance. This leadership has been due to the courage, initiative, and outstanding ability of the industry's executives.



A Brine Grows to a C

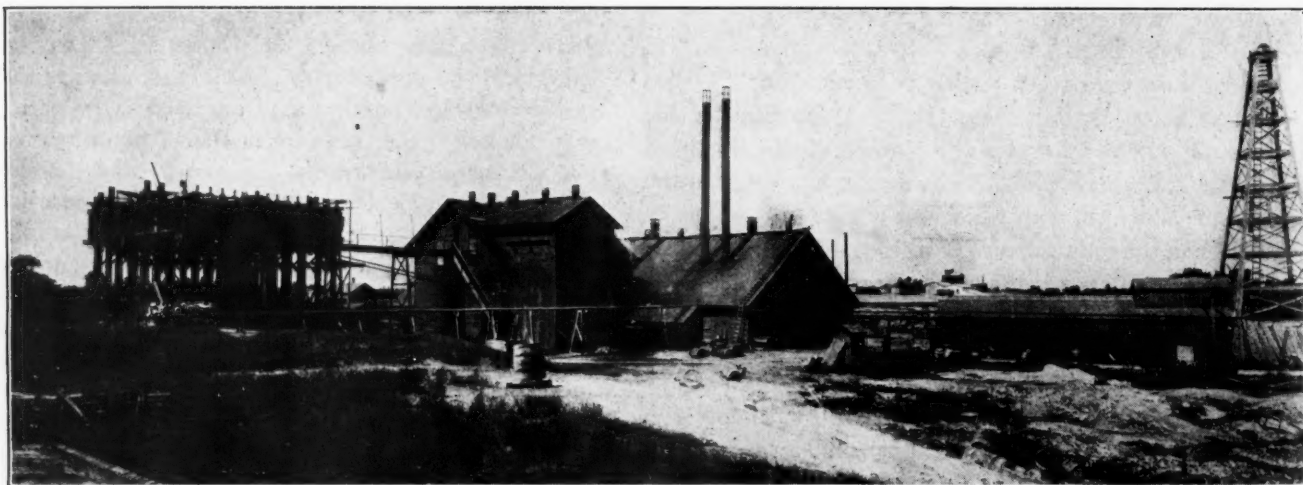
With the native brine underlying eastern central Michigan as his basic raw material, Dr. Herbert H. Dow has built up a chemical business that began with one product—ferric bromide—and now makes over one hundred and fifty.

ON JANUARY 10, 1930, Dr. Herbert H. Dow was presented with the twenty-fourth impression of the Perkin Medal in recognition of his notable achievements in bromine, alkalies, magnesium and its salts, phenols, carbon tetrachloride and other important fine, medicinal, and industrial chemicals. Thus public acknowledgment has been made of chemistry's debt to him and the company he founded and actively directs.

The history of The Dow Chemical Company is so closely interwoven with the life of its sponsor, that to present, properly, the story of the one requires an intimate study of the other. In the late 80's Dr. Dow, then a senior at the Case School of Applied Science, learned of the peculiar characteristics of the brine underlying the east central part of Michigan's lower peninsula. The salt manufactured, employing waste

from the adjacent sawmills as a source of heat for evaporation, was undesirable because of certain impurities in the brine, principally salts of calcium, magnesium, and bromine.

Attracted by the possibility of extracting these impurities and converting them into finished products, Dr. Dow migrated to Midland and the culmination of several years of intensive experimentation finally resulted in the formation of the Midland Chemical Company in 1890 and the commercial introduction of bromides manufactured by an original process based on electrolyzing the brine. Ferric bromide was the first salable commodity, but shortly afterwards through the utilization of the cheap potash liquors, obtained from the lixiviation of wood ashes of neighboring sawmills, a pure potassium bromide in crystal form was offered on the market.

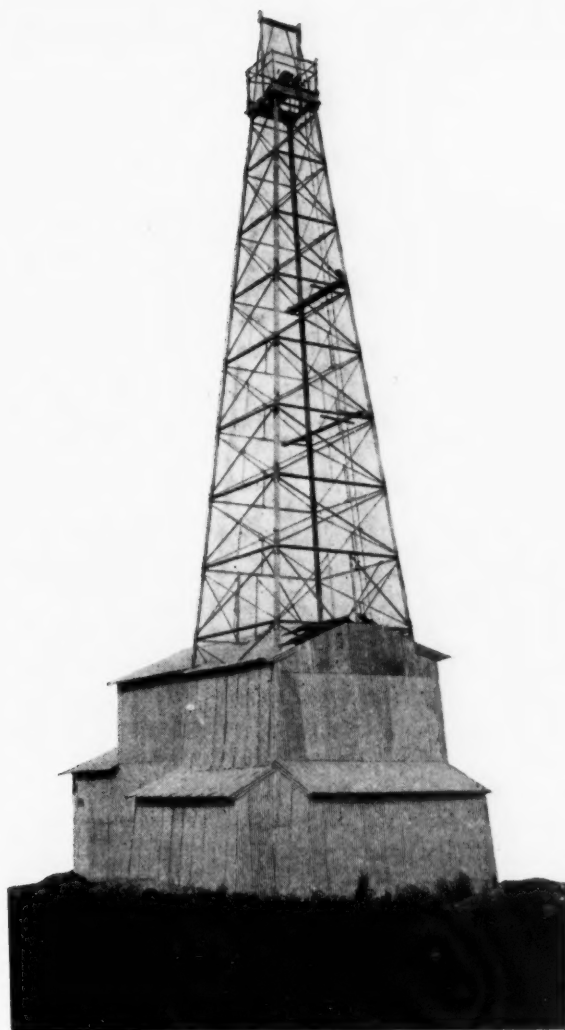


Bromide plant of The Midland Chemical Co., August, 1900

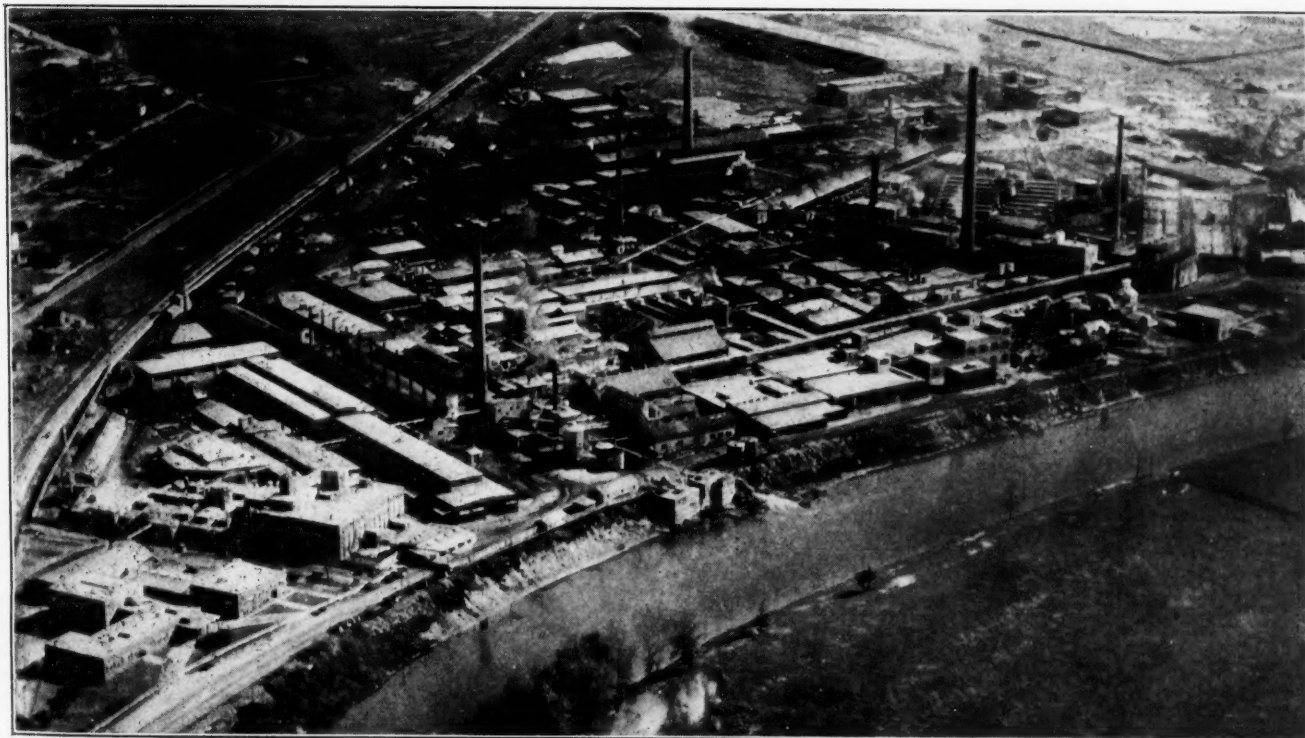
Well a Chemical City

This is one of a series of articles on the history and development of twenty-five companies who have advertised continuously in **CHEMICAL MARKETS** for the past decade and commemorates the tenth anniversary of the present ownership and management.

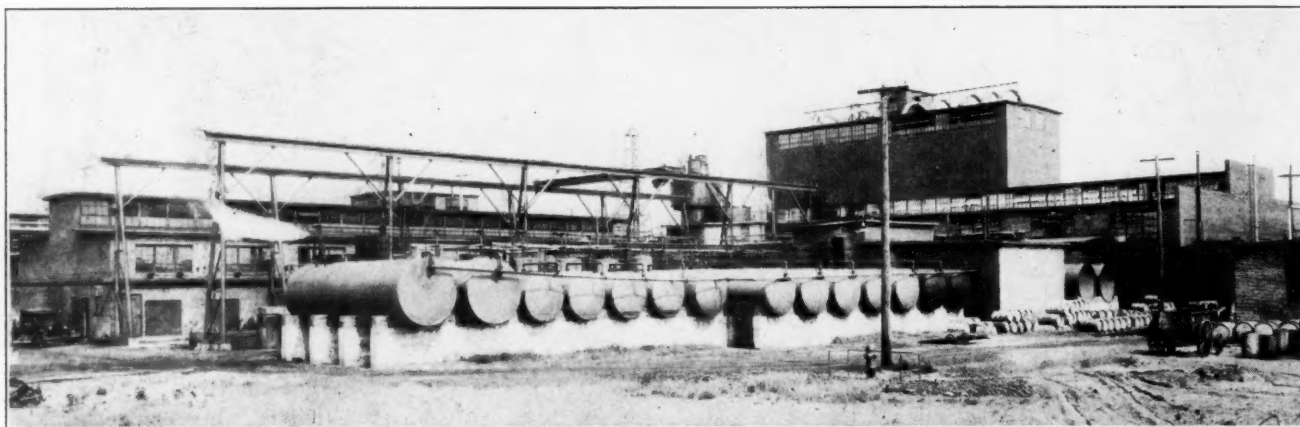
With the Dow electrolytic process for the liberation of bromine a pronounced success the logical adaptation of it for the production of chlorine was shortly undertaken. A small isolated plant for the manufacture of bleaching powder was operated under the name of the Dow Process Company, and two years later, in 1897, The Dow Chemical Company was incorporated to take over and enlarge this plant to an output of nine tons a day. Again in 1900 the output was increased further to meet the demands of con-



A new brine well in Midland



The Dow Chemical Co., as it looks to-day



The Phenol Plant

sumers and in the same year the financial structure of the Dow interests was simplified by the absorption of the Midland Chemical Company.

In each of the two following years the number of electrolytic cells in operation was greatly increased. Enlarged capacity necessitated the discovery of new fields for the utilization of chlorine, and the manufacture of carbon tetrachloride from carbon bisulfide and sulfur chloride was introduced.

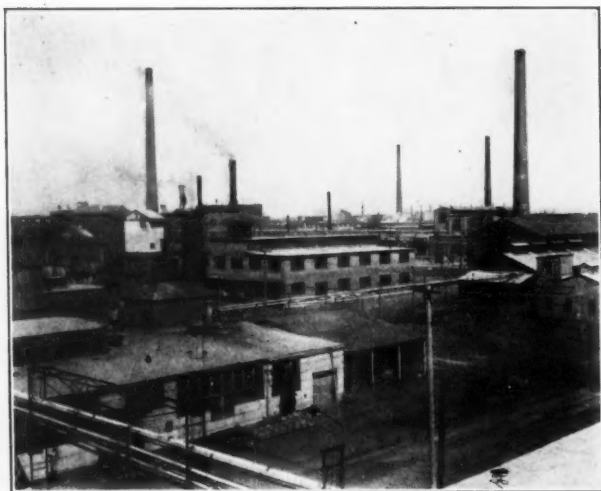
The demand for tetrachloride increased rapidly as its valuable properties became better known and new uses were developed. It is now the most widely employed non-flammable solvent and enormous quantities are sold for use in fire extinguishers and for dry cleaning purposes. The consumption of bisulfide in the manufacture of the tetrachloride finally became so large that a plant for the preparation of the former was erected and with the introduction of rayon manufacture in this country production has on numerous occasions been increased to supply this rapidly growing market. Dow, to-day, is the largest producer of the tetrachloride and supplies a very substantial portion of our bisulfide consumption.

Considerable attention and thought was given to possible industrial outlets for the so-called brine impurities, salts of magnesium and calcium and by

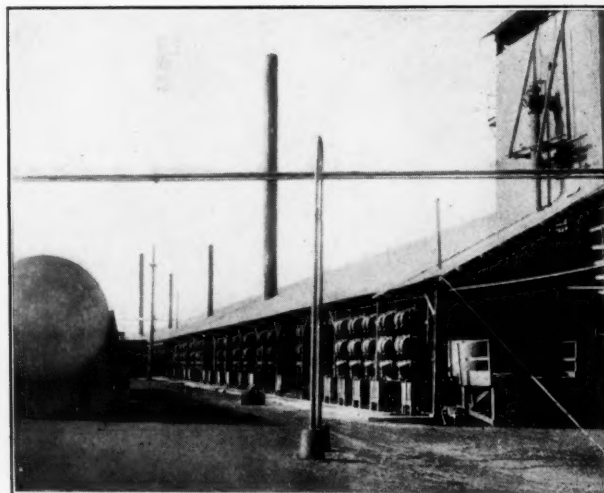
1914 large quantities of magnesium chloride were being used in oxychloride products while worthwhile tonnages of calcium chloride were being consumed as a refrigeration brine medium.

The Dow contribution to the war was noteworthy. Previous to our entrance the Allied governments were supplied with large quantities of phenol, dinitrochlorobenzene, and other essential organic compounds. Dow pioneered the first plant in this country for the manufacture of synthetic indigo, and indigo paste was placed on the market in December 1916. The advantages of indigo to The Dow Chemical Company lay primarily in the possible utilization of bromine for the preparation of brominated indigos superior in fastness and brilliance to all other blue dyes, save, in some respects, the more expensive indanthrene blues.

With the entrance of the United States into the conflict, a branch of Edgewood Arsenal was established at Midland and many additional wells were drilled to meet the ever increasing demand for bromine, specially necessary in the manufacture of many war materials. After considerable work in the Dow laboratories a process for the preparation of mustard gas from ethylene and sulfur chloride was undertaken on a commercial scale early in 1918, the first industrial production of this material in America. It is reported



Salicylic acid and indigo plants



Carbon bisulfide plant

(Right)
New bromine plant of The Dow Chemical Company

(Below)
Aniline plant of The Dow Chemical Company



that this was the only mustard gas manufactured in the United States to reach the battle front. Special stress was placed on phenol production and on several occasions the production capacity of the plant was increased until the daily tonnage was in excess of thirty tons.

The period immediately following the war was one of readjustment. The situation was a critical one for industrial chemical manufacturers. Either tremendous forward strides had to be taken quickly, or a serious crippling and possible entire abandonment of existing equipment undertaken. With courage born of belief in the future of the country, as well as the chemical industry, large sums were voted for research and as general conditions improved the company was well prepared to meet the new demands which developed.

The production of phenol was resumed, and a new and unique process was perfected after extensive research in the Dow laboratories, which has proven particularly successful. The rapid advances made in the plastic and moulded products have in the last few years created a large demand for phenol. To meet this adequately the company constructed the largest and most modern plant in the world.

The chlorbenzol plant, likewise shut down after the armistice, was reconstructed, enlarged and improved to a point where its production capacity is greater than the combined output of all other chlorbenzol plants in existence.

With a large manufacturing phenol unit it was logical to undertake the production of salicylic acid and the salicylates. It is a noteworthy fact that Dow produces all of the intermediates used in the preparation of the medicinal salicylates. Gradually during the last ten years the company has enlarged its pharmaceutical line and has entered in a prominent way into the manufacture of several perfume bases.



Another very important introduction in the last decade has been the synthesizing of acetic anhydride from sulfur chloride and sodium acetate. In addition to its use as an intermediate in the manufacture of dyes and pharmaceuticals, it has found a wide application in the production of cellulose acetate from which the acetate types of rayon are prepared. Large quantities are also used in making non-flammable photographic films.

In 1926 a new process for aniline was developed peculiarly adapted to the facilities of the Company and radically different from generally established practices. This process produces a very high grade of aniline which serves well as a raw material for indigo and other dyes. Large quantities are used

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Over 99.7% Pure

TRADE

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Also 75 Other Products

THE DOW CHEMICAL COMPANY

MIDLAND MICHIGAN

**90 WEST STREET
NEW YORK CITY**

*A Dow advertisement that appeared in CHEMICAL MARKETS
ten years ago*

direct by the rubber industry as an accelerator but aniline also is a most important base for the production of more complex rubber accelerators.

The past fifteen years has witnessed a phenomenal growth in the interest of light metals. With an efficient electrolytic method a small plant for the production of metallic magnesium came in operation as early as 1918. Magnesium has long been known but the recent advances made in the production of stable high strength magnesium alloys has brought about its practical utilization. The extensive progress made in this field has been due largely to the pioneer work of the Dow company. Magnesium alloys have gained a place in the family of engineering metals and are considered of ever increasing importance and in some cases indispensable.

Calcium and Magnesium Chlorides

The year 1926 also witnessed the completion of a new process for the manufacture of calcium and magnesium chlorides. The previous process involved some waste products, such as calcium sulfite which were eliminated in the new one. The tremendous growth in the use and applications of calcium chloride are very interesting. Hundreds of thousands of tons are now consumed annually for laying dust on gravel roads, for the treatment of coal to prevent excessive dust, for curing concrete, and for refrigeration purposes. This company supplies a substantial portion of this tonnage. Following closely upon the completion of the new calcium-magnesium chloride process came the development of a new method for the production of epsom salt. The present epsom salt plant has a production capacity of over one hundred tons a day.

Mention, if space permitted, could be made of many other important and novel developments in the company's progress. Expansion has gained momentum with the years. What a picture of American genius and ability is vividly pictured when comparison is made between the Dow plant of the late nineties and the present mammoth manufacturing center at Midland. To its founder it is a living monument of his initiative, foresight and splendid business acumen. From one product prepared in a modest building the Dow line has expanded to the point where it now numbers over one hundred and fifty chemical products finding wide application in such varied industries as dyes, photography, rubber, leather, rayon, anti-knock gasoline, metals and others too numerous to mention.

Forty years ago Dr. Dow could afford to associate himself with but a handful of faithful workers. Today the Midland plant covers over two hundred and fifty acres and employs twenty-five hundred men. There are three hundred and ten buildings and eighteen miles of standard gauge railway tracks within the plant. Over one thousand tons of coal are consumed a day to furnish power and steam. For its water supply one hundred and twenty million gallons are consumed daily, more than sufficient for a city of one million two hundred thousand population.

It is interesting and significant in this day of mergers, amalgamations and consolidations and kaleidoscopic changes in the corporate structures of industrial companies to note that the rapid strides and accomplishments in the number of products, tonnages and sales volume, have entirely been a growth from within. The scope of manufacture outside of the simple brine components has been kept closely within the natural confines and limitations, namely caustic on the one hand and halogens on the other. These two types may be portrayed as the guiding lines enclosing the Dow field of chemical endeavor. They take their origin in the Dow electrolytic cell as the vertex of an angle. Utilization to the ultimate of all by-products through definite and interlocking processes secures the field encompassed. As these lines extend from the vertex, a record is made of greater and greater production and as they diverge from each of ever broader and broader Dow chemical activities.

The Industry's Bookshelf

Five Years of Research in Industry, by Clarence J. West, 91 pages, published by National Research Council, N. Y. C. \$.50.

A bibliography of books and periodical literature on research in industry.

Economic and Social Problems of the Machine Age, by A. Bruce Anthony, 79 pages, University of Southern California, Los Angeles, Cal., \$1.00.

A discussion of the advantages and disadvantages of machine production in the light of social progress.

The Spirit of Chemistry, by Alexander Findlay, 480 pages, Longmans Green & Co., New York, \$3.75.

A textbook on chemistry for those who study the subject as an element of general culture rather than in preparation for professional or technical training.

The Conductivity of Solutions, by Cecil W. Davies, 204 pages, J. Wiley & Son, New York, \$4.00.

An exposition of the modern dissociation theory and its applications in the conductivities of solutions.

General Chemistry, by H. I. Schlesinger, 847 pages, Longmans Green & Co., New York, \$4.00.

A revised edition of a textbook for college students who have had one year of chemistry.

Sheet Steel and Tin Plate, by R. W. Shannon, 285 pages Chemical Catalog Co., New York, \$5.00.

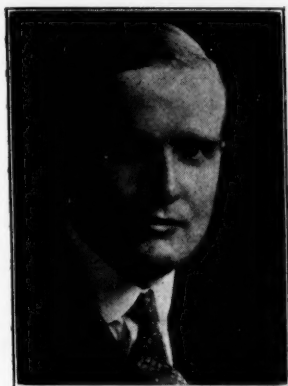
A consideration of the production of sheet steel and tin plate from the standpoint of its utilization as well as its manufacture.

An Introduction to Organic Chemistry, by Eric John Holm- yard, 282 pages, Longmans Green & Co., New York, \$1.75.

A textbook for beginners in organic chemistry by an English teacher of the science.

Foreign Trade in 1930, 457 pages, published by National Foreign Council, New York, \$2.50.

An official report of the seventeenth National Foreign Trade Convention, held at Los Angeles, May 21, 23, 1930, including a verbatim report of the proceedings, discussions and addresses.



Industrial Chemistry in the New Era

By Hugh S. Taylor*

David B. Jones Professor of Chemistry, Princeton University

BUSINESS in America is passing through a period of depression parallel to that which occurred after the War some eight or nine years ago. It has, therefore, offered an opportunity for contrast and comparison insofar as the chemical industry of the country is concerned. It should be possible to take stock and determine how far in the intervening years the chemical industry of the United States has improved its capacity to take care of itself.

Actually, I believe, the chemical industry of the country has every reason for satisfaction in making such a survey. There are radical and consoling points of contrast in the two conditions. In the earlier period of depression the policy of depleting or reducing chemical staffs was everywhere apparent even in the large industrial chemical organizations. For a period of months the research and development sections of such businesses were in a state of suspended animation and only slowly were these organizations amplified and revived.

Perhaps there was a certain advantage in this procedure since it enabled businesses to free themselves from the burden of organizations which perhaps had been too rapidly developed during the War period and its immediate aftermath. It permitted a slow but well conducted effort at building up a permanent and dependable research organization for the future. Nevertheless, such a depletion of research force and suspension of research activity did militate against the attainment of initiative in the chemical field.

It is interesting to record that during this first period of depression and depletion one large chemical organization in this country passed up the opportunity to develop what afterwards became known as the high pressure synthesis of methanol. The sound proposals for this development which were submitted and which followed closely the lines of subsequent technical achievement were relegated to files and active research postponed until better days were at hand. Trained chemists enjoyed a period of enforced

Since the last depression industrial chemistry in the United States has improved its capacity to take care of itself, assuring its successful future.

holiday and only slowly were they brought back into service.

So far as the chemical industry is concerned the present period of depression shows up in marked contrast. Even from a position in a university professorship it is possible to record in this time of depression

a considerable shortage of chemists. The demand for well-trained men is just as keen as it was in the immediately preceding days of prosperity when one's perusal of the stock exchange news was to ascertain how high one's particular stock had reached in contrast to the present attitude, when one's interest in such things is confined to a fervent wish that the price will not fall below a certain minimum. In spite of this, however, chemical research appears to be carrying on as though no such depression exists. It is in this fact that one may see the best hopes for the future prosperity of the American chemical industry and the possible supremacy over the corresponding industries of other nations in the near future. A decade ago the initiative in the chemical field was still largely with Germany. It can be argued with a good deal of vigor and conviction that such initiative is rapidly passing westwards. The care which has been manifested during the past years in building up the larger research organizations and the stability which they have now manifested through a period of depression argues well for their healthy condition.

Commercial Research a Hopeful Sign

It has been conceded by competent representatives of the major foreign chemical industries that, in several matters pertaining to fundamental scientific research in fields of large industrial application, the initiative has largely been seized in the past ten years by United States Government Laboratories, institutions of learning and corresponding organizations inside chemical concerns. The building up of fundamental research organizations inside the commercial unit is probably the most hopeful sign in chemical development in this country. The vigor and success with which fundamental research has been conducted by the electrical organizations such as the General

*Address given Oct. 1, before the Drug & Chemical Section, New York Board of Trade.

Electric Company, the Westinghouse and Bell Telephone Laboratories is a matter of common knowledge. Similar organizations have been built up during the past ten years by representative chemical groups and it is upon such research organizations that the future of American chemical industry will rest. They are the agencies which permit the rapid transition from an idea to its practical solution. It is from them that we may expect the major achievements of the coming decade. These organizations are now comparable in quality and magnitude with those of major organizations abroad and it will be generally granted that, in initiative and fertility of thought, they can not be regarded as inferior to those of other lands.

New Products Suffer Least

One other aspect of the relationship of industrial research to depressed trade may well be emphasized and then we may pass to a discussion of achievements and the outlook for the future. In periods of depression it is the standardized and highly competitive products which suffer the most. The article which is produced of equal quality and with equal efficiency by several organizations is the article which sags in price with elimination of profits when depression occurs. Not so, however, with the newer products which by reason of the individuality or the superiority of some feature are just coming into preferred use. It is these new products of the industry which suffer least in an industrial depression. It is these products which help maintain dividends during the years when competition due to depression has forced the price of standard products down to the level of no return. It is this aspect of the operation of the depression in the industrial chemical organization that should strengthen and confirm the decision of directorates to retain their fundamental research organizations even at the high price that such organizations must cost. Looking back over the previous decade it is certainly true that the large dividends have been produced by reason of new developments and new products and that these latter also are the reason for the present relative prosperity of the chemical organizations as compared with such branches of the nation's trade as the steel and textile industries.

With respect to recent progress it will not be possible to do more than outline those phases of development and progress in which the initiative has been essentially American. These advances are so numerous and important that in many cases they over-shadow the corresponding developments initiated abroad. From every potential raw material new methods of transformation to useful products have been developed. Thus, for example, from cellulose as a raw material we have had the spectacular development of Duco-type paints and varnishes. This entirely American development has revolutionized the industry and has spread outwards from America over the entire world. Since nitrocellulose is the basis both of gunpowder and Duco we have here a

modern variant of the "swords into ploughshares" theme. Also in the field of cellulose we have had the enormous developments of rayon and cellophane, the former less American in initiative but the latter in its water-proofed variety a distinct American contribution and of enormously expanding scope as the last years have indicated.

From petroleum as raw material an entirely new synthetic chemical industry is being built up in which many materials formerly wasted are being converted into products of commercial value. Of these the best known to the general public is ethylene glycol, the "Prestone" of the automobile radiator in winter-time, and also a substitute for glycerine in explosives. The development of these industries may be illustrated by the increase of ethylene glycol production from ten thousand pounds in 1920 to twelve million pounds in 1927. When to this development is added correspondingly developments in the products of alcohols, ketones and esters from the waste products of petroleum refining, one can judge the enormous appreciation in value which accompanies the developments of the chemical industry. The high pressure hydrogenation of crude oils constitutes another method of treating petroleum with the objective of making "two barrels of gasoline grow where only one grew before." This industry, German in origin, is being intensively developed by American engineers and the issue of the exploit is a matter of deepest concern to every user of the automobile in America.

Possibilities of a Single Experiment

How far a single experiment may lead in the transformation of industry is very well illustrated in the case of ethyl gasoline. The chemist found in his laboratory that a thimbleful of an obscure organic compound, lead tetraethyl, added to a gallon of gasoline entirely transformed its characteristics as a fuel. To-day that rare compound of the chemical museum is now made by the ton, is distributed throughout the United States and also has penetrated to the world outside. It has enabled the automobile engineer to design an engine smoother in operation and with greater mileage per unit of fuel consumed. That, however, does not end the record of change. The interest aroused in the effect of so small a quantity of material on the properties of the fuel led to an inquiry into the nature of the chemical compounds in fuel which would confer anti-knock properties. This has resulted in the tremendous development of anti-knock fuels which do not depend for their efficiency on added agents such as lead tetraethyl. Furthermore, by the reversal of a process which is sometimes regarded as normal, this practical discovery has sent back the theoretical scientist to a reconsideration of the mechanism of simple chemical reactions. Theory has been enriched by an entirely new chapter as a result of these investigations.

From coal, water and air as raw materials, as is well known, the larger nations of the world are pro-

ducing their own fertilizers. The initiative in this respect came from the Haber-Bosch process of ammonia fixation in Germany. The French chemist, Claude, extended the pressure technique of the Germans up to one thousand atmospheres. It is in this latter field that a group of American interests have carried out their most signal efforts and one can definitely say that the technique of operation at pressures of fifteen thousand pounds per square inch has been mastered by American chemical engineers and that a whole new field of investigation in this region is at hand. The beginnings of an extension to other than fertilizer materials is in progress and new products from such syntheses are now on the market. New methods of producing hydrogen, one of the essential stages in such processes, have been achieved and the modified technique attained permits larger economies. Also in the field of ammonia synthesis and fertilizer one has to record the development, simultaneously and independently, in America and Europe of the oxidation of ammonia to nitric acid under pressure. In the development of the American process new catalytic materials were developed which found ready acceptance here and abroad. This development called also for the use of corrosion resistant materials on a large scale and the American metallurgist responded to the needs with success. How tremendously the development of corrosion resisting materials is entering into every-day life is spectacularly illustrated in New York City by the new Chrysler and Empire State Buildings. To these remarks may also be added a reference to the large development of chromium plating, another peculiarly American contribution to the field of electro-plating.

In the field of dyestuffs, American industry now cares for over 90 per cent of the total domestic needs so far as bulk is concerned and over 80 per cent of the value. This means that some of the more valuable dyestuffs are still being imported from abroad. Nevertheless, and especially in the division of sun-fast and laundry-fast fabrics the development of American dyes in recent years has been excellent. These products have a quality second to no other.

Rubber Industry Development

The rubber industry has received also its large share of development. Accelerators to promote good vulcanization and retardants to delay the processes of deterioration and decay have given a quality to rubber products never before possessed. In tire consumption alone the researches of the past decade have saved the American automobile user millions of dollars of money and have eliminated much of irritation from the operation of the pneumatic tire. It is not impossible nowadays to guarantee a tire for 20,000 miles.

New drugs, new antiseptics, like hexyl resorcinol, synthetic hormones, these are among the contributions to the field of medicine and surgery. New products like butanol and glycerine from the opera-

tion of ferments, new resins and gums, new liquids like diphenyl oxide for power production through boilers, these are further indices of the vitality of the science.

What of the future? Physical and chemical science in its theoretical aspects has progressed during the past decade at a rate that is probably unparalleled in all the history of science. The pace of progress has been unprecedented. Does not this mean a corresponding acceleration of pace in the applied field in the near future? History would indicate an affirmative answer. The beginnings of large scale chemical industry synchronized with overthrow of the phlogistonists and the foundations of modern chemistry by Dalton, Lavoisier and Berzelius. The organic chemical developments of the late nineteenth and early twentieth century followed upon the energetic prosecution of theoretical organic chemistry under Liebig, Perkin, Baeyer and Fischer. The last phase of industrial chemistry arose from the applications of physical chemistry to the factors determining equilibrium, its displacement by temperature and pressure, the work of the theoretical chemist, Haber, being the conspicuous example. To-day we penetrate into a new territory. The secrets of the internal structure of the atom and molecule are being laid bare. With this new knowledge to be applied, the control of the chemist over natural forces should be more acute—his potentialities of achievement more astonishing than hitherto recorded in the annals of industrial chemistry.

Manufacturing Chemists Association of the United States discusses current freight rates and shipping container developments at Atlantic City meeting September 11. Tests for new alloy metal drums being placed on market were outlined by steel barrels and drums committee—chairman, T. P. Callahan, Merrimac Chemical Co., Boston—Committee on poisonous articles and miscellaneous packages—chairman, M. F. Crass, Grasselli Chemical Co., Cleveland—outlined research work to develop methods to determine relative toxicity of class B poisons. Carboys committee reported progress in establishing single type of container, three kinds now being used where twelve were formerly used. Traffic committee—chairman, H. W. Arthur, United States Industrial Alcohol Co.—discussed effect of new general revision of Eastern class rates on chemical freights, agreeing new revision, effective October 1, will be beneficial.

American Chemical Society fall meeting in Cincinnati, September 8-12, centers general interest on petroleum hydrogenation influence on industrial developments and on the broadening influence of ferments in synthetic chemical operations. Among other subjects discussed were carbon dioxide "ice" refrigeration and the use of chlorination of diphenyl in the production of various substances. Dr. William McPherson, president, gave an address on "Chemistry and Education," and Dr. Oliver Kamm presented a new theory on the circulation of the blood.

American Leather Chemists Association Council meets Sept. 19 to appoint chairmen for various committees—Frank S. Hunt, Division of Properties and Uses of Leather; R. W. Griffith, Cooperation with the Department of Commerce; Prof. G. D. McLaughlin, program committee. H. S. Ritter was asked to do research on the determination of water penetration or water resistance in leather.

Serving the Industry for



W. H. Sheffield
President, Innis, Speiden & Co., Inc.



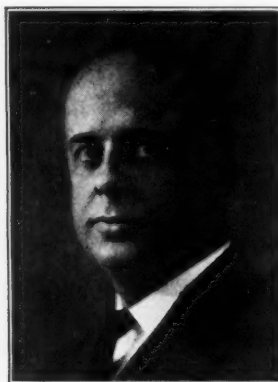
H. G. MacKelcan
Sales Manager



C. L. Speiden
Secretary



G. F. Sheffield
Vice-President



E. C. Speiden
Vice-President

INNIS, Speiden and Company's name is linked with the very beginnings of industrial chemistry in America. Indeed few companies now functioning can trace their beginnings back to the primitive state of manufacturing prevailing in this country nearly a century and a quarter ago.

For a proper understanding of the motive surrounding the establishment of the company, recourse must be made to the political situation, both national and international, existing shortly after the close of the American Revolution. Napoleon, his back to the wall, was fighting against a combination of allies headed by his ancient and irreconcilable enemy in a last determined effort to continue his wide-flung European dynasty. Both France and England made a practice of interfering with American shipping in an attempt to cripple the commercial supremacy of each other. President Jefferson, bearing in mind the war-exhausted condition of our country and its inability to successfully cope with another similar period of trial, determined to place a general embargo on all shipping entering or leaving the States. While the immediate result of this drastic action was ruinous on business generally, its unforeseen but lasting effect was a decided impetus to domestic manufacturing. With the growth of woolen and cotton factories came the necessity for suitable dyes—then all natural dyestuffs.

A Dye Plant at Poughkeepsie

The raw materials for the preparation of the natural dyes were in the main gathered in the islands of the Caribbean, shipped to Europe, processed there and shipped back to America. With sailing vessels the single medium of conveying such cargoes, delay and enormous expense inevitably followed.

Nathan Gifford, a young man with a broad vision, perceiving our utter dependence upon Europe, and the latter's complete domination of a market essential to his own country's progress, determined to build a mill for cutting dyewoods near the infant American textile centers. And so with admirable courage and fortitude he established at Poughkeepsie in 1816 a small plant and entered bravely upon the manufacture of a few of the natural dyes. In a short time, however, the struggle became too great, due to the serious

Chemical over 100 years

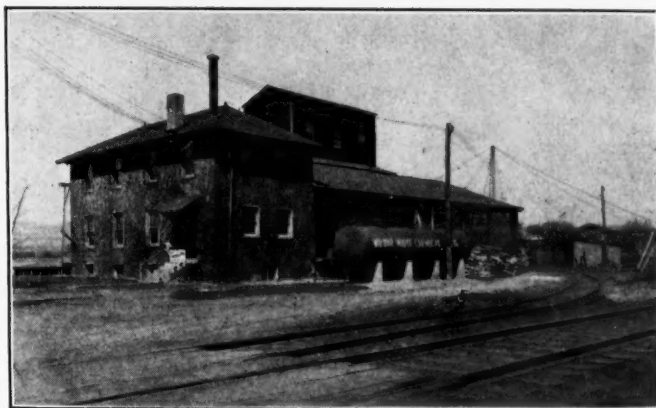
One of a series of articles commemorating the tenth year of the present management and ownership of CHEMICAL MARKETS

handicap of limited capital and he turned to Aaron Innis, one of the leading merchants of the town for help.

Convinced of the basic soundness of the enterprise and of the need of a dye plant in America, Innis came to the rescue and placed at Gifford's disposal the necessary funds to carry on the business. Undoubtedly, Aaron Innis was influenced in his decision by the possibility of securing profitable cargoes for the fleet of boats he operated on the Hudson. It is quite possible too, that our very American characteristic of multiplicity of interests had its inception in this logical step.

New York Office Opened

With true Yankee shrewdness, Innis carefully arranged to safeguard his financial investment by including his son-in-law, Howland Sherman, in the resulting firm of Gifford, Sherman and Innis. In addition to the mills at Poughkeepsie, a New York office and warehouse was opened and the firm in addition to the sale of its manufactured line soon entered into the importation of other dyes from abroad. From the East Indies such articles as indigo, tumeric, lac and cutch were brought to widen the services of the house to the dyers of New England. Thus was brought into existence the guiding thought of maintaining complete stocks, a policy which has always and still is uppermost in the minds of those responsible for the company's policy.



Wilbur White Chemical Co. plant

Built upon a firm foundation the firm soon began to grow and prosper. Chemicals of many and diverse kinds were required for mordanting, bleaching, dyeing, and slowly the firm embarked in the importation from foreign sources, or from domestic producers wherever possible, the requisite industrial chemicals for use in connection with their dyes.

Aaron Innis' busy and varied career ended in 1844 and he was succeeded by his eldest son George who, upon Howland Sherman's death in 1858, came into sole possession of the business, carrying on in a most successful manner for a period of twenty-six years the chemical enterprise he had inherited.

With the passage of time the firm in 1885 passed into the hands of Hasbrouck Innis, only son of



Isco Chemical Co. plant, Niagara Falls, N. Y.



Chicago branch, Innis, Speiden

George Innis, and his cousin, Aaron II, son of George's brother. Shortening the name to Innis and Company but otherwise continuing the high standard set by its founders and expanding gradually with the growing demands of a number of new industries, the cousins operated the company until 1904, when George V. Sheffield acquired complete ownership.

Two years later, C. C. Speiden and M. Speiden joined hands with Sheffield, a new company being incorporated under the name of Innis, Speiden and Company. With this major reorganization the company was enlarged considerably both in the diversity of its products and in its physical assets. New and commodious quarters were secured for a main office and warehouse at 46 Cliff street, an address which was to become well known in the industrial chemical life of New York City for here the company remained for over twenty-one years enlarging the properties from time to time, as the need arose for additional space.

The history of Innis, Speiden from its inception has been closely allied with the political happenings of the country. Its very foundation was in a sense economic and again a very important step was undertaken in 1916, influenced unquestionably by national and international conditions.

Hampered in the importation of many of its most important industrial chemicals because of the limitations imposed by the European war, the company erected at Niagara Falls a large and modern plant manufacturing electrolytic caustic, bleaching powder

and several other important items in the heavy chemical field and operated under the name of Isco Chemical Company, Inc. With our introduction into the war a year later, the plant was further enlarged and formed an important link in the chain of chemical factories supplying the sinews of war to our forces abroad.

Under C. C. Speiden's and his associates' able management, the company quickly readjusted itself to peace-time conditions in 1919 and 1920. The spectacular growth in the use and application of new and old industrial chemicals and allied products found the company in a strategic position of triple importance based on large manufacturing facilities operated in this country, excellent foreign connections, and numerous business alliances with large domestic producers. The line was continuously added to and to-day includes a comprehensive list of over 250 industrial chemicals, without taking into consideration items more properly designated as oils, waxes, etc. Innis, Speiden and Company is one of the largest single sources, of supply on caustic potash and potash salts in the country to-day.*

Research is constantly being fostered by the company and many important products have come from its laboratories. Evidencing the broadness of the scope of the research division, mention need only be made of two products, Larvacide, a very useful fumigant, and Ta-To-Lac, a controlled form of lactic acid primarily designed for the industrial baking field.

In 1926, due to increasing ill health, C. C. Speiden laid down the exacting duties of this office and became chairman of the board and William H. Sheffield succeeded to the presidency. Under Mr. Speiden's long regime of twenty-six years the plants at Jersey City, Murphreesboro, Owego and Niagara Falls were erected and many of the present branch offices were established and enlarged. Fruitful were the services he rendered his company. Unfortunately he was not spared to enjoy his leisure and within a few months of his retirement he died.

*In a great measure through the initiative of Innis, Speiden the former dependence of this country on foreign sources of supply for potash salts and caustic potash has been corrected.

INNIS, SPEIDEN & Co., Inc.

Established 1819

Incorporated 1906

Industrial Chemicals

Import COMMISSION MERCHANTS Export

46 Cliff St., New York

Chicago Boston Philadelphia Cleveland

Cable address:—Innis, New York: Codes A.B.C., Lieber's,
Western Union, Private

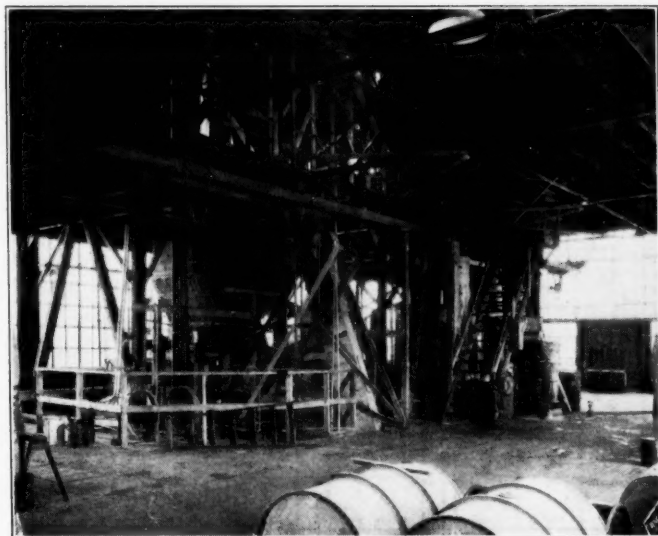
An Innis, Speiden advertisement appearing in CHEMICAL MARKETS ten years ago.



Office of the Isco Chemical Co.

The vigorous progressive policies of the company have been carried on and enlarged under the leadership of W. H. Sheffield, the present president.

In 1928 in step with the march of progress, Innis, Speiden moved from its homey Cliff Street address to the modern and enlarged main offices now occupied on the ninth floor of 117 Liberty Street. While many of the customers regretted the passing of the old quarters the company, schooled for a hundred and fourteen years to acceptance of progressive measures, found the change a welcome one, signifying, as it did another step forward in the chain that binds closer to perfect realization the Innis, Speiden slogans "over a century of service and progress." As manufacturers, importers and selling agents, Innis Speiden has carved an important and unique niche in the industrial chemical life of the nation. The present officers are President, W. H. Sheffield; Vice-President and Treasurer, George V. Sheffield; Vice-President, Eben C. Speiden; Secretary, C. L. Speiden; Assistant Secretary and Sales Manager, H. G. MacKelcan; Assistant Treasurers, C. C. Wickstead and G. S. Hamilton.



An interior view, Wilbur White Chemical Co.

Nitrate Cartel Holds First Meeting

International nitrate cartel meeting in first session Sept. 11 provides each country shall be own master in internal market, so far as able to supply needs. Importing countries, such as France, will be covered by special agreement fixing amount to be received from exporting countries. Central organization at intervals of six or ten months will fix price calculated to give adequate and stable returns. Countries which will be required to limit production will be recompensed from contingency fund built up from contributions based on proportionate production of each cartel member. Agreement holds for one year. Reduction in output will vary in each country, a point which French delegates always stressed, as French industry at present is capable of filling only one-half of country's annual needs. France was unwilling to face necessity of always importing 100,000 tons annually at a cost of 500,000,000 to 600,000,000 francs. French production is allowed to increase, therefore, while production of countries exporting to her will be cut down progressively. This will affect especially Britain and Germany, the losses to whom will be made good from a fund directed by the International Nitrate Producers' Corporation, already established at Basle, with a capital of 6,000,000 Swiss francs. Twenty per cent of capital has been subscribed already. Recent German study estimates increase of production for principal countries in recent years as follows, in thousands of metric tons of pure nitrogen:

	1929	1927	1925	1913
Chile.....	510	246	375	433
Germany.....	677	576	446	12
Norway.....	61	35	27	15
England.....	110	20	13	..
U. S. A.....	77	17	11	..
France.....	64	24	14	3
Italy.....	50	26	13	3
Japan.....	57	53	43	1
Totals.....	1,606	997	942	467

The table omits mention of production in several European countries. For instance, the Belgian output of sulfate of ammonia last year is reported at 158,000 tons, Italian at 146,000 and Polish, Czech and Dutch at between 60,000 and 90,000. Since world consumption in 1930-31 is estimated at less than 2,200,000 tons, there is need for reduction of output, regardless even of stocks in existence, estimated at 800,000 tons. The fall in prices is indicated in France, which imports heavily from Chile, by the fact that sulphate of ammonia cost 145 francs a 100 kilos in 1927, 128 a year later, and 106 currently. The decline in price of nitrate of soda is parallel. All danger of complete demoralization of market is removed now for at least a year, and even if the United States is not a partner in the cartel, it is assured against risk of dumping.

Lime Sales in United States

Lime sold by producers in United States in 1929 amounts to 4,269,768 short tons, valued at \$33,478,848, according to United States Bureau of Mines, Department of Commerce, representing decrease of four per cent in quantity and of eight per cent in value as compared with 1928. Sales of hydrated lime, included in these figures, amounted to 1,550,771 tons, valued at \$12,771,525, a decrease of four per cent in quantity and of six per cent in value. The average unit value of all lime showed a decrease from \$8.18 a ton in 1928 to \$7.84 in 1929, and that of hydrated lime a decrease from \$8.40 a ton in 1928 to \$8.24 a ton in 1929. Sales of lime used in the manufacture of chemicals, 2,290,612 tons, valued at \$16,787,408, increased 7 per cent in quantity; lime sold for construction, 1,640,827 tons, valued at \$14,303,539, decreased 17 per cent in quantity, and that sold for agricultural purposes, 338,329 tons, valued at \$2,387,901, increased one per cent in quantity.

Artificial lemon juice and oxalic acid are manufactured by means of fungus according to report to American Chemical Society.

By Comparison---

Chemical Business Is Good

A comparison of stock price and employment figures in the chemical industry compared with those in other lines of business shows that the chemical business is not only above the others but compares well with its own former years.

DIFFICULT, it is, to name the exact order of the five leading industries of this country, unless the particular yardstick to be employed is specifically mentioned and then, undoubtedly, the result would be open to question. A few of the more common ways of computing the relative positions are: total capitalization, annual value of finished products, total number employed, payrolls, etc.

Certainly the chemical industry is very close to the top of any such list. Today, chemicals and allied products constitute the country's fourth largest industry in value of yearly output, and third, in size of total capital invested. Bearing in mind then, the possibility of contradiction as to importance, the automobile, steel, building and textile industries have been selected for a comparison of present business condition with these prevailing in the industrial chemical field and related products.

In attempting to provide such a comparison recourse is made to the following groups of statistics, trend of stock prices, wholesale commodity prices, the indices of employment, payrolls, general manufacturing activity and total inventories.

Taking up first, the question of employment, chemicals and allied products, appear to have suffered but very slightly by comparison, showing a decrease of but 9% in July 1930 from the same period in 1929. In fact the drop in employment in the chemical industry is less than that for business generally as the following table demonstrates.

Employment*
1926—100

	July 1930	July 1929	Per cent decline
1 Automobile.....	82.9	120.5	31%
2 Building Products other than steel.....	72.8	88.1	17
3 Chemicals.....	89.3	95.8	7
4 Steel & Iron Products.....	84.0	101.9	18
5 Textiles.....	77.6	94.3	18
6 General business.....	86.0	97.0	11

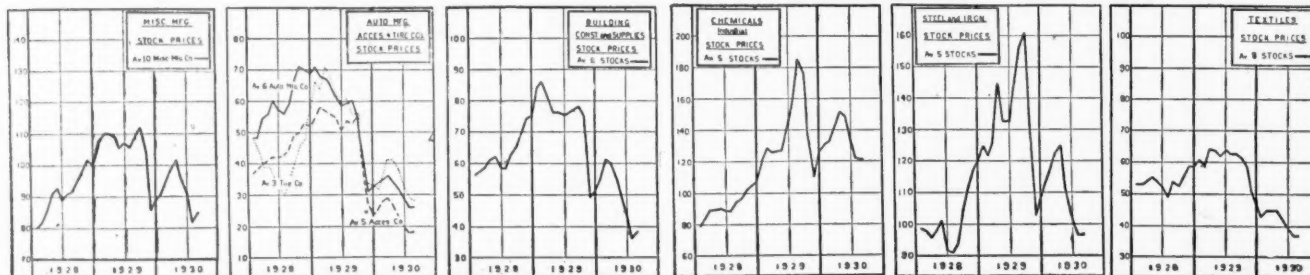
*Department of Commerce.

Likewise payrolls in the chemical industry while naturally reacting to a condition of general business depression again have an enviable record when comparison is made with steel, automobiles, textiles and building and with business generally. It is significant how closely the relative positions of the various industries compare in employment and payrolls indicative of an accurate check of one set of figures against the other.

Payrolls*
1926—100

	July 1930	July 1929	Per cent decline
1 Automobile.....	70.4	107.2	34%
2 Building Products other than steel.....	64.5	83.5	23
3 Chemicals.....	91.8	100.4	9
4 Steel & Iron Products.....	74.5	101.9	27
5 Textiles.....	67.3	91.1	27
6 General business.....	84.1	103.0	19

*Department of Commerce.



Industrial chemical stocks have held to a high level, as compared with those of any other industry represented in the charts above

Fitch Publishing Co.

Considerable difference of opinion exists as to the actual size of inventories. Not a few authorities base their forecast of better business conditions in the near future on the supposition that stocks, specially of manufactured goods, are close to the point of exhaustion while others assert that inventories are still excessive and are proving a burden and hardship retarding considerably any immediate improvement.

In view of this sharp division of thought, the following table of merchandise inventories prepared by the American Bankers Association Journal is interesting.

Comparison of Merchandise Inventories

	June 1930	June 1929	Per cent Change
1 Automobile.....	\$275,828,000	\$368,867,000	-24.2
2 Building Materials....	21,329,000	22,207,000	-4.4
3 Chemical Products....	78,754,000	76,902,000	+2.4
4 Steel & Iron.....	45,019,000	45,184,000	-0.1
5 Textiles.....	46,174,000	57,550,000	-19.7
6 Miscellaneous.....	152,973,000	150,536,000	+1.6

It would most certainly seem from these figures that in the automobile and textile lines that inventories have been rather radically reduced and in these lines such as the chemical industry where inventories do show an increase it is indeed very slight and insufficient to warrant undue concern.

The August 1930 index of general wholesale prices shows a decline of 13% from the corresponding figure of a year ago. Whether comparison is had with this figure, or the per cent of decline for the specific industries under discussion, the chemical industry has maintained a rather even keel on the all important question of prices, its reduction of 7% being only matched by the automobile industry where the per cent of decline was also 7%.

Wholesale Commodity Prices 1926-100*

	August 1930	August 1929	Per cent Decline
1 Automobile.....	102.5	110.7	7%
2 Building Materials.....	87.4	96.7	10
3 Chemicals & Allied Products	87.3	93.7	7
4 Steel & Iron.....	90.1	97.6	8
5 Textiles.....	77.7	93.1	17
6 All commodities.....	84.0	97.7	13

*Department of Commerce.

The value of industrial chemical common stocks as measured by the price charts prepared by the Fitch Publishing Company show a decline of 32% at the end of August, 1930 when compared with the same period last year. While this represents a serious decline, an examination of stock prices in other industries again reveals the chemical field in the most favorable position in an unfavorable situation. It should be pointed out, however, that the decline in stock prices of industrial chemical manufacturing companies was 9% greater than in the miscellaneous group of stocks including the rails and public utilities.

Stock Prices

	August 30 1930	August 30 1929	Per cent Decline
1 Automobile.....	27.1	59.2	54%
2 Building.....	39.0	76.5	49

3 Chemicals.....	120.5	178.2	32
4 Steel & Iron.....	96.8	152.0	36
5 Textiles.....	36.5	62.0	41
6 Miscellaneous.....	84.0	108.5	23

It is in a study of the indices of the present rate of manufacturing operations that the stability of the chemical industry stands out very prominently. While some like the automotive register startling declines close to 50 per cent, the chemical, on the basis of the following indices, reports a net increase of 11 per cent between the July figures for 1930 and 1929. This is the more remarkable when it is noted that the chemical industry is the only one of the five groups to indicate a higher rate of manufacturing operation.

*Rate of Manufacturing Operations
1923-1925 monthly average-100*

	July 1930	July 1929	Per cent Change
*1 Automobile.....	75.3	139.5	-46%
†2 Building.....	84.9	156.0	-39
*3 Chemicals & Allied Products.....	140.6	127.0	+11
*4 Steel Plants.....	109.7	144.0	-24
*5 Textiles.....	79.7	110.0	-28

*Data compiled by Electrical World based on consumption of electrical energy for power purposes.

†Federal Reserve Board.

Summarizing briefly the chemical industry has registered the least decline of employment and payrolls, when compared with the automotive, building, steel and iron and textile industries and general business, the stability of its price structure is only equalled by the automotive field, the price structure of common stocks of chemical manufacturing enterprises have declined less than the stocks of companies engaged in the four lines of endeavor used for comparison, the rate of manufacturing activity on the part of chemical concerns is greater now than in the same period a year ago and it is the only one of the major industries to do so. This record of achievement is all the more remarkable because of the fact that the automotive, building, steel and textile industries are all, with the possible exception of the building trades, very large consumers of chemicals and next to the chemical industry itself, which is its own best customer, these four industries consume perhaps larger quantities of industrial chemicals of one sort or another than any other group of producing industries.

American Manganese Producers' Association meets in Mayflower Hotel, Washington, Nov. 10-11, in third annual convention. Sessions will include presentation of following subjects: Russian situation and effect of five-year dumping program on manganese and other American industries; world manganese situation with recent developments in leading manganese producing countries and leading steel producing countries; possibilities of domestic market with special attention to manufacture of ferro manganese and including commercial use of manganese in fertilizer; major developments in beneficiation of lower grade manganese ores.



Safety in a Chemical Plant

By George Pickett Stokes

Safety Director, St. Louis plant, Monsanto Chemical Works



"Doc" Stokes

THERE has been an evolution in the methods used to promote safety as in all other phases of business. Safety programs are keeping in step with the advancements made in manufacturing and marketing.

The laggards are finding it increasingly costly to stay behind. Progressive managements are finding it increasingly profitable to

devote time and money to insure the smooth working of a sound and business-like program of safety in their plants.

Not so long ago this matter of safety was almost entirely one of ballyhoo. Safety was a slogan. The men were told to "play it safe", but nothing much was done about it. Accidents occurred the same as

always with alarming regularity. Gradually this haphazard "an accident will get you if you don't watch out" plan was replaced with a sane, logical program that delved down into the fundamentals of accident prevention and then worked out methods for overcoming the *causes* of accidents. It was realized that accidents don't just "happen"—they are "caused," and for every cause there's a reason. The scientific and accurate analysis and charting of these reasons by men, who are devoting their entire lives to safety work, has made safety a business. It is a worthwhile business for the management to know something about.

Education

The stellar role in the safety program is education. Through safety committees, bulletins, talks, etc., messages can be put over that carry with them the power of education. Without them no safety program can be successful. A man's head is his best safety device if he uses it.



The personnel of the Monsanto acid plant, first winners of the trophy below

"Safety in a chemical plant is a business, not a slogan", says the author of this article, and he tells here how the business of safety is managed in the St. Louis plant of the Monsanto Works.

In our St. Louis plant, for instance, safety groups and committees are brought together once a month under the leadership of their chairman, selected by the members of the committee. These men talk freely among themselves. Hidden hazards are brought to light and valuable tips given the management. The safety director is a member of each committee and acts as secretary.

Bulletin boards offer an excellent educational medium. We prefer the "homemade" bulletins that have homely illustrations that appeal to a man's pride and love for his family. Bulletins designed to frighten the worker into safety are avoided. Bulletin boards should be properly placed and kept clean. The bulletins themselves should be changed once a week.

The company house organ can be of assistance in conveying your safety message. One or two pages in each issue will go a long way toward making the men safety conscious.

Good Housekeeping

Too much can not be said in favor of good housekeeping. A cleaner plant is a safer plant. The men themselves appreciate working in clean surroundings.

Just as a man feels better when he has had a shave, so a group of men will work better amidst clean equipment, walls, floors, etc. Cleanliness promotes good health, guarantees clean goods and demands the respect of everyone.

Protective Measures

Mechanical and physical protective measures are necessary in a chemical plant. In addition to the mechanical guarding of equipment, which should be given careful thought by the safety director, there are protective measures for each man to be considered. In departments requiring protective clothing, it is important to issue clothes that *fit*. The men should have clean rubber gloves, clean socks, and clothes that can be buttoned or tied. Pockets gather dust and should be avoided. Jumpers should be tucked into the top of the trousers.

Goggles constitute a separate problem. There



The President's Safety Trophy presented by Edgar M. Queeny to be awarded quarterly to the Monsanto plant having the best safety record. Five times insures permanent possession



"Home-made" safety posters, used in the Monsanto Works, appeal to the worker's pride and love for his family. They are 22 x 28 inches in size, of colored card-board, and have colored pictures for illustration

is always much discussion as to why men do not wear their goggles. One reason is that many men who are suffering from poor vision are compelled to wear a goggle with simply a plain lens. Such men should have their eyes examined and supplied with goggles to meet their own individual condition. Each man should

have his own pair of goggles and be held responsible for that pair. All goggles should be washed every week and inspected.

Gas masks, helmets and respirators play a big part in any chemical safety program. We issue them from the safety department on order from the de-

partment head or his assistant. After a mask has been worn, it is thoroughly washed and sterilized. The gas mask canister is changed after 24 hours use. Each morning clean masks are exchanged for used ones. The same routine applies to helmets. Respirators are issued from the clothing room and on check. We use many styles and believe we have solved the irritated throat problem by constant thought regarding these inexpensive respirators.

Safety harness is used for lowering men into deep tanks. A duplicate set is always on hand.

First aid boxes are fine *if* they are not cluttered with useless medicaments. A solution of boric acid and a solution of sodium bicarbonate, with an eye cup, are essentials. Bottles are properly labelled. Boxes should be inspected daily and solutions changed frequently. The men feel better when they know this protection is handy.

We believe in "lots of water quick" and keep drinking fountains in handy locations. Emergency showers are distributed around the plant. In regard to general showers, it is well for each man, after each shift, to get under the shower and should be compulsory for men who wear protective company clothing.

Inspections

In our plant every department is inspected once a month for good housekeeping. Notes are taken on these trips and the following day findings are posted on the department bulletin boards and mailed to the plant superintendent and manager. Ratings are given and much worthwhile competition is the result.

Toilets, wash and locker rooms are inspected once a week. Rubbish cans are kept painted and emptied regularly. It is this regularity of all inspections that makes for increased efficiency and safety.

Fire hose is tested monthly under pressure. Smaller extinguishers should be tested once a month. The Monsanto fire department is composed of men in the plant. Drills are held twice a month.

Awards and Campaigns

Contests among plants and among the men should be constant and varied to maintain interest. Properly managed, and with suitable awards offered, safety contests can be made very inspiring. A silver cup, known as "The President's Safety Trophy" is offered to the Monsanto plant having the best record over a period of ninety days. The trophy becomes a permanent fixture for the plant winning it three consecutive times.

Other awards may be offered. At one of our plants we entered the entire working force into a three months' contest. The department that worked that length of time without a lost time accident was to get a free dinner at the plant cafeteria for each of its members. What happened? The entire force of some 450 men worked three months without a lost

time accident and kept going for 145 days, setting a new record. The cafeteria almost went out of business.

We do not believe in a one man safety organization. We do not believe in paternalism or in too much welfare work. Every man must be his own safety engineer, and he must be made to know that the responsibility rests on his own shoulders. The safety director merely co-ordinates and directs the efforts of each man and each group of men. He can do this only by gaining the friendship of every man in the plant. If I may be personal for a moment, I may state that the men in our plant call me "Doc"—not "Mr." They know me as one of them. They can count on my interest in their problems. Without this spirit of friendship and confidence, a safety director is lost.

Safety should be sold to the new man when he enters the plant. After the doctor has finished his examination of him, get him by the hand and make him feel glad to know you. Welcome him and caution him about the little things he should know about his working conditions. Tell him two hands and two feet, and a head as well, are needed in climbing ladders. He will appreciate your interest and will possibly go on for years with a clean accident record.

In closing, let me repeat—safety is a business. It should be begun with the idea of permanence behind it. Temporary and spasmodic safety campaigns are almost as bad as none at all. Once begun and carried through consistently, it is a business that will pay dividends regularly to the workers and to the management.

Al Alvarez, Grasselli Chemical Co., New York, is crowned golf champion of chemical industry at Salesmen's Association's annual outing, Briarcliff Manor, N. Y., Sept. 16, turning in a card of 85. E. A. Orem, E. I. du Pont de Nemours & Co., won second gross prize with 89, Richard Noonan, Drug Products Co., took third with a 92 and Robert Quinn, Mathieson Alkali Works, was fourth with 99. Robert Wilson, Dow Chemical, won the low net for members with 103-33-70. Following were Ira Vandewater, R. W. Greef & Co., net 72, Ira MacNair, MacNair-Dorland Co., net 73 and Q. T. Dickinson, Calco Chemical Co., net 76. Guest net prizes were won by John Dallan, Brown-Edwards Co., Ed Burke, Jr., Frank Lynch, Sun Tube Corp., and G. S. Furman, their net scores having been 74, 79, 83 and 83 respectively. The big kicker's guessing contest turned out to be a breeze for Ed Burke, Sr., who knew he was a bad golfer, picked a handicap of 70 and hit the drawn number squarely with a net 74. Other prizes in this division went to Ralph E. Dorland, Dow Chemical Co., net 75, L. Hirsch, net 73 and Harry Noonan, Drug Products Co., net 72. H. W. Craemer, Carpenter Container Corp., Brooklyn, donated a special prize for high score on the second hole. L. Martin needed 12 blows on that one and took home an umbrella stand. About sixty members and guests were on hand. Association plans two more outings for year. Committee in charge this year includes William H. Adkins, Givaudan-Delawanna, Inc., Robert Quinn, Mathieson Alkali Works, R. J. Grant, Noil Color & Chemical Co., H. B. Prior, H. B. Prior & Co., and Grant A. Dorland, MacNair-Dorland Co., Chairman.

Chemical Foundation presents to National Institute of Health gift of \$100,000 for endowment for basic chemical research in public health problems. Presentation was made by W. W. Buffum, general manager and treasurer of the Foundation, Paul Smith, secretary and W. F. Keohan, Washington representative.

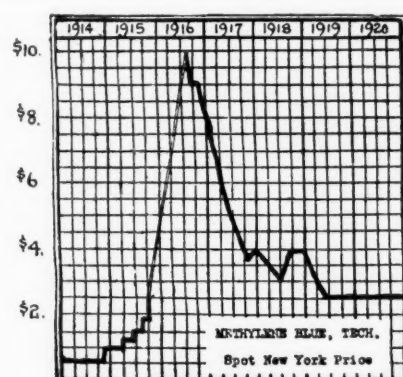
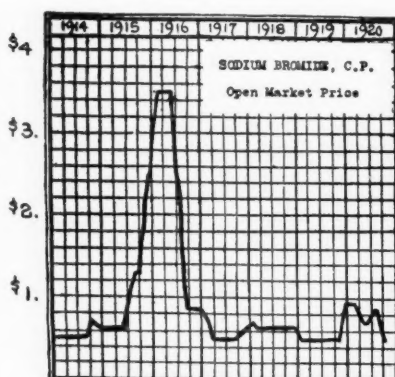
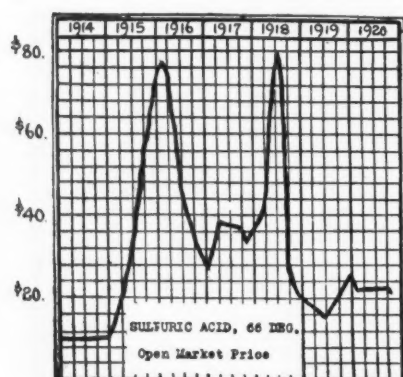
Chemical Prices Firmer Than Ten Years Ago

COMMENTING on market conditions existing in October, 1920, ten years ago, DRUG AND CHEMICAL MARKETS informed its readers that, "Chemical prices have been going down for three or four months, on some items six or seven months, while it is only during the past four or five weeks that other commodity prices have been actually declining."

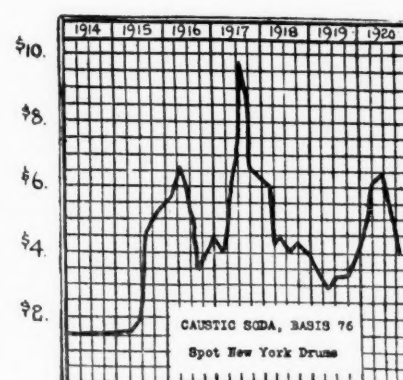
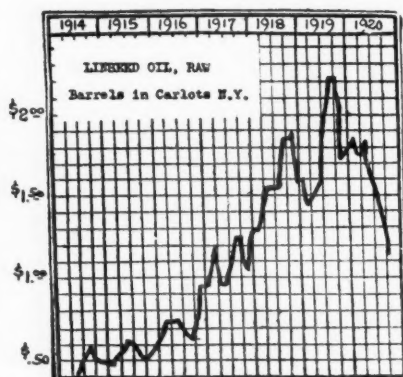
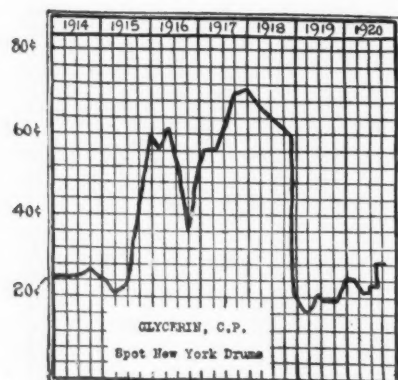
Again we are in the initial year of a new decade, a year of widespread depression, strikingly similar in some ways to 1920, and yet in others, fortunately, quite dissimilar. Compare the market report of 1920 just quoted, with what the September, 1930 markets' editor of CHEMICAL MARKETS finds, "The chemical

price structure has exhibited a remarkable tenacity in holding at existing levels despite a rather serious recession in volume," and the principal difference between the two periods is very obvious.

A comparison of prices of the commodities charted by the DRUG AND CHEMICAL MARKETS editor to illustrate his point proves illuminating when we find that in October 1920, after several months of severe price declines, sulfuric acid, 66 degree, was quoted at \$21.00 a ton against \$15.00 to-day; sodium bromide, c. p., 45c against 42c; glycerin, c. p. 28½c against 13½c; linseed oil, raw, 15c against 10c; caustic soda \$4.00 cwt., against \$3.76. With the



The accompanying diagrams have been prepared for the purpose of illustrating that well ahead of the reductions in clothing, shoes, automobiles and other important items which have been attracting so much attention of late, chemical prices started on the road to lower levels. Chemical prices have been going down for three or four months, on some items six or seven months, while it is only during the past four or five weeks that other commodity prices have been actually declining. Chemicals were one of the first groups to start down and hence are likely to be among the leaders to touch bottom and start up again.



Reproduced from the October 13, 1920, issue of DRUG & CHEMICAL MARKETS

exception of the bromide and caustic prices, where the differences are but 7% and 6% respectively, the others are very much lower, sulfuric 29%, glycerine 53%, linseed oil 33½%.

Commodity	Percent. decline		
	1920 Oct. price	1930 Oct. price	1930 over 1920
Acetic Acid, glacial, 100 lb.....	\$12.00	11.01	8%
Sulfuric Acid, 66 deg. ton.....	21.00	15.00	29%
Ammonia, Anhydr., lb.....	.40	.15½	388%
Barium Chloride, ton.....	120.00	63.00	48%
Bleaching Powder, 100 lb.....	6.75	2.00	296%
Copper Sulfate, 100 lb.....	7.25	4.25	41%
Potassium Bichromate, lb.....	.31	.09	290%
Potash Caustic, lb.....	.22	.06	278%
Soda Ash 58%, 100 lb.....	2.65	.06	50%
Caustic Soda 76%, 100 lb.....	4.25	2.95	31%
Sodium Cyanide, lb.....	.29	.16	45%
Tin crystals, lb.....	.40	27¼	31%

Prices are for large quantities.

Average 12 industrial chemicals 128%

Not alone does a marked difference exist in the prevailing prices of the two eras, but likewise, a great disparity in thought. To illustrate, we again resort to the October 13, 1920 issue of DRUG AND CHEMICAL MARKETS and note that among other remarks on conditions in the sulfuric acid market that, "It is generally admitted that \$21.00 per ton can be done for 66 degree acid," while the September, 1930 issue of CHEMICAL MARKETS sums up the situation, "Shipments continue to be considerably below the record figures of last year but a curtailment of production schedules has prevented any unwieldy accumulations and prices remain stationary."

The first pictures a situation where neither buyer nor seller has anything but the vaguest idea of the true market condition, a situation where the buyer names a price and the seller accepts it with alacrity for fear that a chance to unload surplus stocks will be snatched away by a competitor. The second, to be sure, admits serious recession, but not disorganized and uncontrolled demoralization of the price structure. Herein lies the principal difference in the set of conditions prevailing in 1920 and 1930. The crash ten years ago was the direct result of over-production and inflated war prices, not of the stock market alone, but of what was of greater importance, commodity prices as well. The crash last year was likewise a direct result of over-production, but with the saving factor that commodity prices in general were not inflated by any external reason or series of reasons. Most certainly is this true of the chemical industry where prices have remained in a fairly stationary position for the last four or five years, with selling prices very close to production costs. Sulfuric has varied but 50 cents a ton in the last three years and caustic but a few cents a hundred-weight over the same period.

Such however, was not the situation ten years ago. Resorting once more to the graphs we find that sul-

furic for example dropped from its peak of \$80 a ton in the middle of 1918 to \$21 a ton in October of 1920 and linseed oil from its peak of 30c in 1919 to 15c. It is small wonder then that demoralization became rampant and the bottom literally fell out of the market.

Executives keyed to the demands of a war-absorbed country had little conception of the meaning of curtailment of current production to fit current needs. The universal cry from a harassed war industries board had been production and still greater production. When the demand suddenly ceased, executives were nonplussed with the inevitable result that more than necessary confusion resulted than would, or should have occurred had those seated at the controls understood that in peace-time, selling involves a greater problem than merely manufacturing products.

Thanks to this enlightenment stocks of manufactured articles have not been excessive for many years and in most lines of manufacturing endeavor production schedules were promptly adjusted to current demand. Where are to-day the distressed stocks of chemicals, the ruinous inventories of jobbers and second hands and the sacrifice sales of raw materials in the hands of manufacturers? They just aren't and we can be mighty thankful for it.

Conditions on the surface may appear to approach in severity those prevailing a decade ago but merely scratch the surface and basically they show up quite differently and infinitely better. A more rapid return to normal conditions must be the inevitable result of these important differences. With commodity prices on a solid foundation and while yielding perhaps a little here and a peg or two there but refusing in the main to stage a disorderly retreat, and manufactured stocks attuned to demand, a satisfactory volume cannot but be upon the horizon to those who do not lack the courage but to look for it.

American Leather Chemical Association council approves program of committee work submitted by R. W. Frey, chairman of division of analytical and control methods, for year September, 1930, to June, 1931. Committees with chairmen are: Filtration of tannin solutions for the determination of insolubles, J. S. Rogers, chairman; Extraction of tannin raw materials, W. K. Alsop, chairman; Determination of moisture in tannin extracts, G. W. Stanberry, chairman; Plumping power of tan liquors, E. R. Theis, chairman; Determination of neutral fat in sulfonated oils, A. C. Orthmann, chairman; Skin color tests, C. A. Blair, chairman; Methods of analysis of miscellaneous tannery materials V. J. MLejnek, chairman; Acidity of vegetable-tanned leather, T. Blackadder, chairman; Comparative tannin analysis, H. C. Reed, chairman; Determination of loss by evaporation in oils, H. S. Ritter, chairman.

American Electrochemical Society meets in Detroit, Sept. 25-27. Causes and prevention of corrosion of automobile parts are discussed, with Dr. F. N. Speller in charge of discussion. Prof. Dwight K. Alpern demonstrates new phot-voltaic cell. Experiences in the production of new high test cast iron are discussed under direction of Dr. Richard Moldenke, iron metallurgist, whose principles of melting cast iron have been adopted throughout the world.



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Planning for Profits

By D. A. Wilcox, Chem. Eng.

MAKING a profit has become distinctly a scientific matter. No longer can we trust to luck or a large margin to cover inefficiencies in process and management.

Too many other companies are beginning to recognize the value of modern management methods to permit any individual company to proceed in the old haphazard fashion. A business may be compared to an engineering project, such as building a bridge; if then, we follow the procedure of an engineer the comparison will be clear. First, he considers all the prevailing conditions; the terrain, the stresses and strains to be encountered and the strengths of the materials with which he has to deal. Knowing these facts he lays out a general design and then detailed plans and specifications for each part. All elements are coordinated to the best interests of the whole. During the process of actual construction each element is constantly checked to see that it measures up to the specifications. The result is that a bridge is erected exactly as designed and functions according to expectations.

Designing a Profit

Business organizations and human relations are the raw materials of the manager. They differ from steel and concrete in that their characteristics and reactions are not so definitely predictable. However, even here, modern scientific studies are developing the laws that pertain to them and getting them more and more definite each day. The up-to-date manager takes advantage of this to the most of his ability. Through economics he studies business conditions; through a study of the accounts and other internal statistics he gains a thorough knowledge of his own particular organization. Through practical psychology he treats of human relations and how to deal with people en masse and individually. The budget constitutes his general design and standard costs the detailed plans and specifications. Through the control they afford he gets the constant check on opera-

Why is a Budget? or What is a Cost? might well have been the title of this suggestive discussion of chemical company finances.

tions against these specifications, and, if his preliminary studies have been deep enough and wise enough; if his budget soundly based and the control effectively operated, he too will secure that which he sets out to get—a profit on the operations.

Let us consider briefly some of the fundamentals of this scientific management which definitely plans for profits. In listing them some may appear to be so elementary as to need no mention, yet the most elementary principles are frequently flagrantly neglected and the accountant is vitally concerned with all of them because he is a part of the management; his success is tied up with the entire organization, not with a small particular field in it. It is to his vital interest that all the elements of success be present; it is his duty, if he sees one lacking, to do his utmost to correct the deficiency. Hence he is concerned in them and must appreciate what they are.

Attributes of a Successful Business

The first is a proper organization. Responsibility must be definitely established and known. Men must be secured to carry out the various functions of the business and they should be the best possible men for the particular jobs. This is the age of the specialist and having other than a qualified specialist in a position simply results in inefficiency. It is not always possible of course to get the best possible specialist for a particular position, but insofar as an inferior person is in charge, just so far will that particular function be operated less efficiently. We

need maximum efficiency in all departments for maximum results.

Leadership is essential. It is intangible but a very necessary feature of every successful concern. A good leader inspires all members of the company and brings out the best that is within them. How this is accomplished is an art in itself.

Budgets

Definite planning is the third essential. This does not mean the mere mental planning of a general nature in which we all necessarily indulge so that we may proceed at all, but it means definite concrete plans laid out in black and white, of the manner, in which we should conduct all phases of our business, based on the very best information which we have. It means taking all members of the business into consultation, telling them what they will probably be up against, and getting their views as to what they can do to meet conditions. It means that when these various estimates have been received they will be consolidated; all departments will be co-ordinated for the common good, and then each member of the organization will be told just what is to be expected of him for the coming period. The result is what is termed a "budget."

Much has been written about budgets and they deserve much consideration. Budgeting involves four steps; the assembly of all known facts; the forecasting of probable conditions based on the best available knowledge of the facts, and the correlation of causes and effects based on an analysis of past conditions; the laying out of a definite plan of action in black and white, and lastly following current operations to see whether they are progressing according to the plan.

Budgeting means foresight, and foresight is always better than hindsight. It means consideration of the operations of each department in advance by the department heads and the co-ordination of each to the common good, and it lays down definite standards for each man to follow. By securing this consideration of the problems in advance and by laying down definite standards it increases interest in the work and builds morale. All of this tends towards greater efficiency entirely aside from the other advantages secured from the operation of the budget itself.

Forecasting Is Possible

The objection sometimes made to the budget is that it is impossible to forecast events sufficiently far ahead to permit of laying out definite plans. When this is said it usually means that the particular individual making such a statement has not sufficient information himself to enable him to make the forecast. Instead of saying "It can't be done in our industry" he probably should say "I can't forecast for my business." Usually the information can be secured which, if studied sufficiently will enable quite accurate forecasts to be made for varying lengths of

time depending on the nature of the industry. The budget period will naturally vary in different industries, dependent upon their stability, and in all cases the budget must be subject to revision at frequent intervals if necessary. Industries such as electric power, telephones and other public utilities can forecast for long periods ahead whereas those dependent upon styles or direct consumer demand may be able to forecast only a few months ahead. The budget period may vary from a few months to many years, but in any event constant looking ahead and planning is much better than attempting to cross each bridge as you come to it.

It is really surprising the accuracy with which some industries had succeeded in accomplishing budgets. Many, in which it might appear impossible to forecast future sales, have yielded to it when fully studied. Such fields as the petroleum industry, machine tools, automobile tires, photographic materials and many others show that, when carefully studied, it is possible to tell probable sales over a year within five per cent and some considerably more accurately.

The Budget an Aid to Management

The budget should be made from the management's point of view and an aid to management, not a straight-jacket for the business. If properly set up and "sold" to the organization it can be made a tool of great value; if improperly set up it can be a frightful thing and a hindrance rather than a help.

The next element is a system of cost accounting to locate inefficiencies and to report on them in time to be of practical benefit to the management. This is best accomplished by the standard cost system referred to in the previous article.

Costs of Products

Costs of individual products must be secured to aid in setting sales policies and these costs should be based on good *normal* conditions so that the management may know at all times what such a cost would be. It is of no particular value to know what the exact cost is under any particular set of conditions actually prevailing (even if we could secure it, which we cannot). Such conditions may never repeat themselves—certainly the particular combination of rates of productions, prices or raw materials, expenses and all operating conditions will never be exactly alike twice, and hence any such cost cannot be exactly duplicated and is not a guide as to what a future cost would be. Such costs are of little value to the operators because they are ancient history when secured, and are of little value to the sales department because they are too variable. The only costs of real value are those calculated for normal conditions. They can be used for sales purposes by adjusting each particular element to meet current conditions, and they are of value to the operators because any deviation from the standards tell them just when and where things are going wrong.



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CHEMICAL

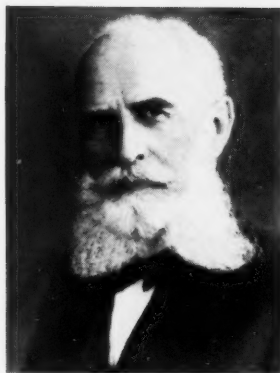
Photographic Record



Lawrence Tenny Stevens, noted sculptor and Prix de Rome man, exhibits the Chemical Markets Medal at his New York studios. He has chosen for the face of the medal, John Harrison, first American chemical manufacturer and for the obverse side a very striking conventionalized treatment of the modern chemical plant



Prof. William McPherson, Ohio State University, presides at eightieth meeting American Chemical Society, Cincinnati, September 9-12. Attendance of 1688 chemists (count them below) sets record



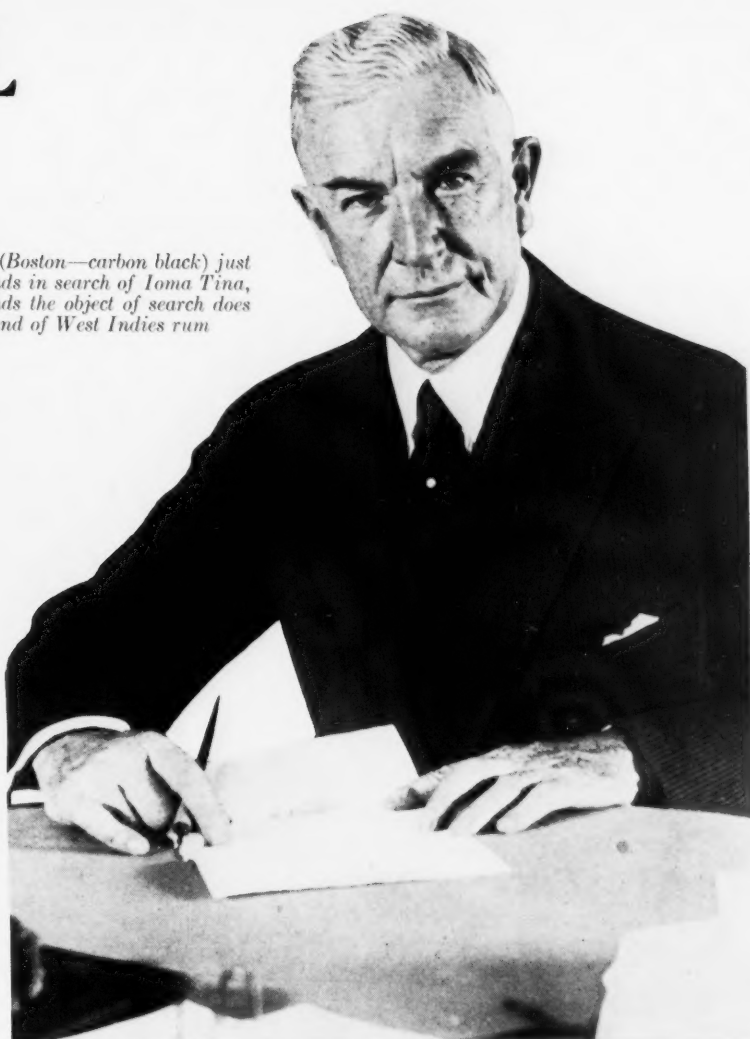
September is convention month in the chemical field. Dr. Richard Moldenke, noted metallurgist who leads round table discussion Electrochemical Society Meeting, Detroit, September 26-30



L NEWS REEL

ord of Chemical Activities

(Below) Thomas Cabot, treasurer and son of Godfrey I. Cabot, (Boston—carbon black) just misses the big blow in Santo Domingo. Leading a party of friends in search of Ioma Tina, reported to be the highest peak in eastern North America, he finds the object of search does not exist. He denies it is really the nickname of a new brand of West Indies rum



President Hoover's appointment of Henry P. Fletcher as chairman of the newly created Tariff Commission receives favorable comment from the industry

(Below) Some of the many chemists who met in Cincinnati for the meetings of the American Chemical Society, held at the University of Cincinnati, September 9-12



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Some means of bringing out the best that lies within each man should be devised. Leadership, previously mentioned, will go a long way towards doing this but even leadership has its limitations. When all is said and done there is nothing so effective in this respect as providing that each man from the common laborer to the highest executive secures monetary remuneration in as nearly exact proportion to his contribution to the business as is possible. This involves incentives. It is a large problem and we have many different types of incentive systems, some providing bonuses, some providing for earned increases, group bonus systems, incentives for key men and the like. Some are good; some are bad, but which depends upon the particular application, not the basic idea. Every management owes it to itself and to its employees to give this matter the most careful consideration. Properly designed and operated there is probably nothing which will be more effective in increasing the productiveness of the organization.

Development of Trends

The accounts should provide some means of developing the trends of all important phases of the business. Each factor, such as material prices, labor costs, mill operations and the like should be set up by itself and studied over a period of several years. By this means the management can determine the effect of its policies, ascertain the relationship between major causes and effects and lay out a scientific background for future planning.

With these factors properly provided the management can sit back and deliberately plan for profits. They can be reasonably sure that these profits will be realized—providing external conditions permit—but without them the problem becomes more difficult; in many cases it means working in the dark and trusting to luck—a condition both unsafe and unnecessary in this day of scientific management.

External Conditions

The possibility of external conditions preventing profits was noted just above. Many factors entirely beyond the control of any management may operate to affect the business just as we now see the current depression slowing up many lines. Running all the way from mob psychology through various forms of legislation to the effect of policies adopted by our competitors we are at the mercy of external conditions. In many cases all we can do is to study conditions and try to foresee what is about to happen and so trim our sails to suit the wind. In some cases we can do more—we can influence the external conditions and make them less harmful to us. One of the major influences without our control is competition. Aside from the natural and usual operations of competition it becomes increasingly bad when it is based upon a misconception of facts or when prices are set upon

costs which are figured in a manner quite different from our own. As before mentioned it is quite possible to figure two or more entirely different costs for the same product made in the same or similar mill dependent upon the manner in which the various items of expense are prorated. In such cases items which are high cost products to one company may appear to be low cost ones to another and prices set accordingly, thus resulting in a cut-throat competition which may be very harmful to both of them.

The answer lies in uniform accounting methods. Each industry should have its cost association and each member of the industry should co-operate with the association for its own benefit and protection. These cost associations should study the various means of apportioning expenses and lay down definite methods for all of them to follow. If this were done a very potent element of external danger would be removed. This is particularly true in the chemical industries, which have so many problems peculiar to themselves and of especial difficulty.

Problems of the Chemical Industries

Let us examine now specifically just what some of the problems which are peculiar to this business and see in what manner they differ from other industries and what steps can be taken to meet them. We find that, by the very nature of things, the chemical industries present many special problems not met with in other fields.

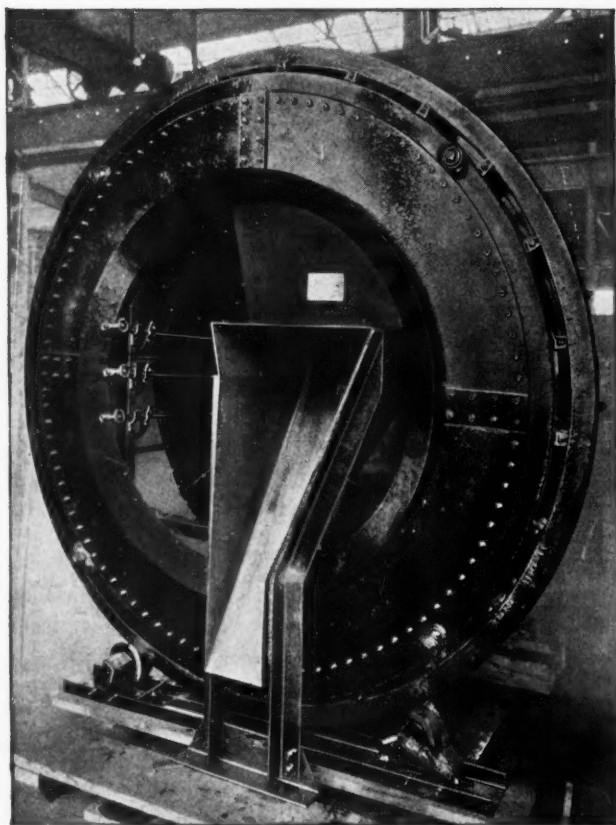
In most other lines factory operations are an additive, or forming, proposition. A bar of steel goes through certain machining operations and finally becomes a bolt, a shaft or some other mechanical part; other parts are added and we finally get an automobile or a cash register, or some other assembly, but it is possible to follow the material through from start to finish and know with a fair degree of accuracy just what material went into each article, but in the chemical industries we start off with a raw material and get a variety of products, each carrying varying amounts of the original values. We have major products, towards the making of which the efforts of the factory are chiefly directed, and by-products, wastes and losses. We have questions of yields and shrinkages to contend with and many other complications not ordinarily met with in other businesses.

Costs are divided into two classes, direct and indirect. The direct costs are those in which the expenditures are made for the sole benefit of the particular product; indirect costs are those incurred for the benefit of a number of different products or to maintain the business as a whole. These indirect costs must be distributed to the individual products on some basis in order to build up a correct total cost.

Material Costs

Usually material costs are considered to be direct costs and so treated, but in the chemical industries

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it is exceedingly difficult to distribute material costs among the various products that result from a chemical reaction. Even when there is no definite chemical reaction and the process is merely a mixing one it frequently happens that in the further process of manufacture parts of the raw materials are recovered and added to another lot. Thus in the paper industry water is used largely as a medium of transportation and is finally drawn off on the wire of the paper machine, leaving a web of paper. The water, as it drains through the wire, however, carries with it a certain amount of fine particles of pulp and fillers, so, in order that these will not be lost, this water is used over again for washing new pulp, and for other uses. It thus follows that some of the values put into the beaters for a certain grade find their way into the new pulp and there is an exchange of values between grades of paper. This makes for a complicated problem when we attempt to find the material costs of a particular grade.

Again we encounter the case where, in the purchase of a raw material, it is necessary to take some of an inferior quality in order to get what we require of the quality we require. Thus in the leather industry whole hides must be purchased at a flat rate per pound but for the main product, belting let us say, we can only use the center of the hides. The balance, the butts, bellies and so forth must be worked off in some secondary products.

How Material Costs May be Applied

There are a variety of ways in which material prices can be applied. The principle methods are as follows: 1. by means of formulae; 2. by the use of chemical proportions; 3. in proportion to the relative values of the resulting products; 4. by charging all materials to a principle product and crediting it the revenue received from the sale of by-products.

The first method involves the use of definite formulae used to make a certain quantity of each product. Thus in the paper industry again, a formula is made up which shows the quantity of pulp and filler which should go into a beater to make a certain grade of paper. Knowing the usual shrinkages, and making allowance as best can be done for the exchange of values between grades, it is assumed that a certain beaterful of "furnish" will make a certain quantity of paper. Using this as a basis the cost of the material in the paper is calculated. Dependent upon the accuracy with which measurements are made to determine the losses, transfers of values, etc., the costs can be determined more or less accurately. In fact in many cases it will be found that the accuracy of the costs are entirely determined by the accuracy of measurements available and often more or less wild guesses have to be made. Peculiarly enough, once such a guess has been made and appears in black and white as a cost it rapidly assumes the rating of a fact and is

taken seriously as such. Many examples could be cited, which would be amusing if they were not so serious.

The formulae method of applying material costs is applicable wherever the operation is primarily a mixing one (with or without chemical reactions) and is not greatly complicated by the production of more than one product. When two or more products result from the same mixture some other method should be used.

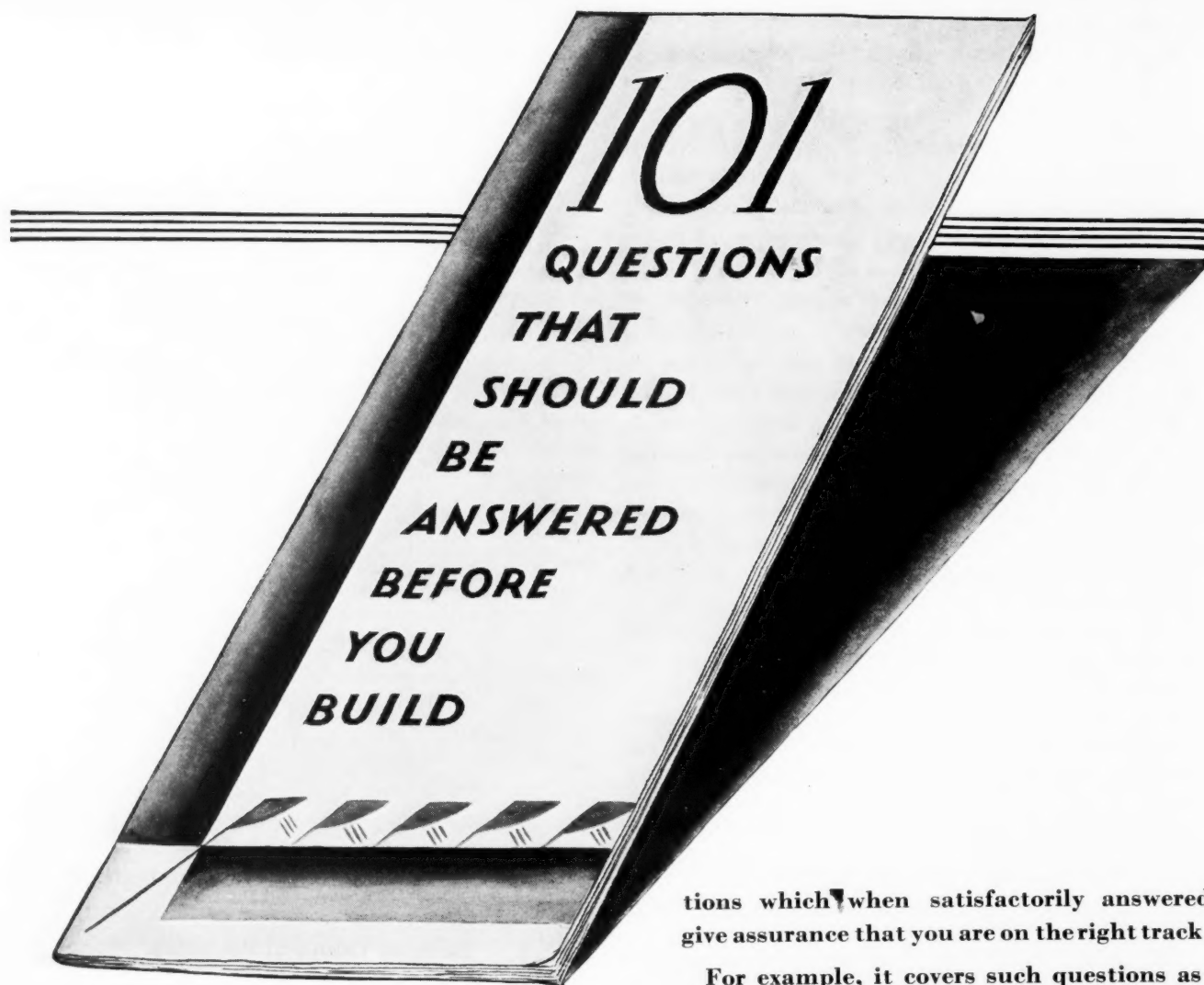
Chemical Proportions

This method can be used when the yields of the resulting products are in approximately their chemical proportions and each is of about equal rank with the others in importance. A typical example of this is the electrolytic bleach process wherein chlorine gas and caustic soda results from the passage of an electric current through a solution of salt. In such a case the cost of the salt is properly distributed between the chlorine and the caustic on the basis of the atomic weights of the chlorine and sodium in the NaCl. The requirements for the use of this method are a chemical process where the yields of the various products are in approximately their chemical proportions and are of about equal value. If, however, yields are not on this basis the proportion of the yields themselves, if fairly consistent, can be established by experience and use. It should not be used where the products differ greatly in value nor where the raw material is such that some inferior material must be accepted in order to get the good.

Basis of Values of Products

This brings up the third and fourth methods of distributing material costs. If the business of the company is primarily to make a certain product, but in order to make it, a proportion of another product results which can be sold only at a low price and at a constant loss if it had to bear a proportionate amount of the material cost, there is no particular use in costing the product that way and constantly showing the loss on it. Such a loss would necessarily be a part of the cost of the major product and is incurred in order to make it. For this reason we may as well recognize the fact in the beginning and arrange our costs accordingly.

There are two ways to do this. In the third method noted above it is recognized that the secondary product has some value, but inferior to the main product, and it is fair to charge it with a reasonable proportion of the cost of materials if we can determine what such a reasonable proportion is left over, but we do use it for other purposes. While purely an arbitrary method it seems fair to assume that if the belting is worth three times the value of the other products, then the value per square inch of the area of the hide used for belting should be charged at three times that per square inch used for the other products and this is the method used.



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Synthetic Weather Increases Production

UP TO a very few years ago, many manufacturing processes were hampered, and often suspended altogether for periods, because weather conditions interfered with perfect production. Now every plant can make its own weather—of just the kind needed, whether it be dry, moist, hot or cold, and indeed even two or more kinds of weather in one building at one time, if necessary.

Air conditioning, the making of "artificial" weather, implies the automatic control, establishment, and maintenance of definite conditions of temperature, humidity, air movement and air purity.

It is applied generally for three purposes. At some stage in the process of manufacturing, many materials must be dried or have water or other liquid removed by evaporation. Sometimes the reverse of this process is demanded. At other times it is necessary or desir-

By making their own weather, an increasing number of businesses are stabilizing their products and their rates of production.

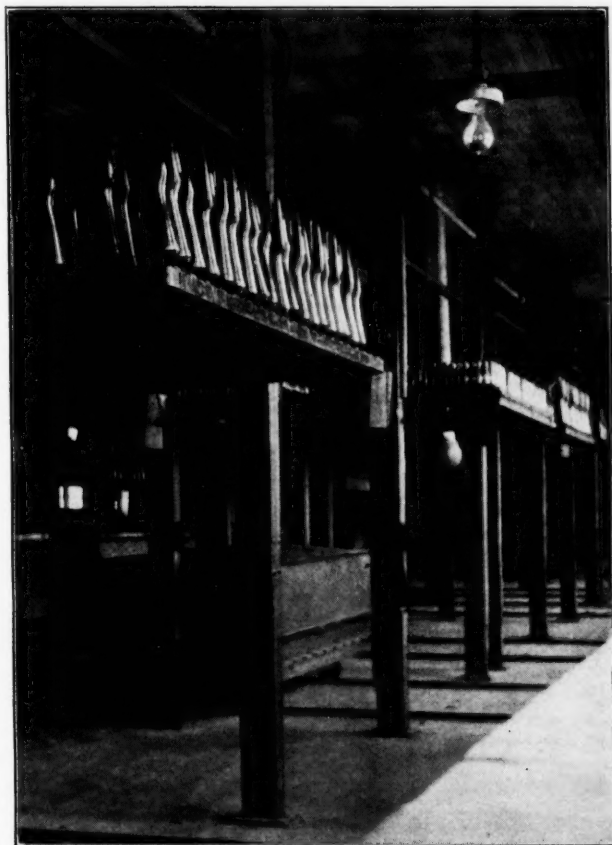
able to subject materials to a moist atmosphere to make them absorb water, either to render them more workable or to change the weight. Again, the quality of the final material or the efficiency of the operation may be highly sensitive and variable to the atmospheric conditions. Atmospheric conditions are now made suitable for the material or the operation by air conditioning, in many plants that formerly experienced these difficulties.

Drying, as commonly used in chemical industries, most frequently implies processing, in that the removal of water or other volatiles is always accompanied by physical, and often by chemical changes which influence the character of the product. In determining the effect of drying or processing upon the final characteristics of material, the most important consideration is the rate of moisture removal during the various stages.

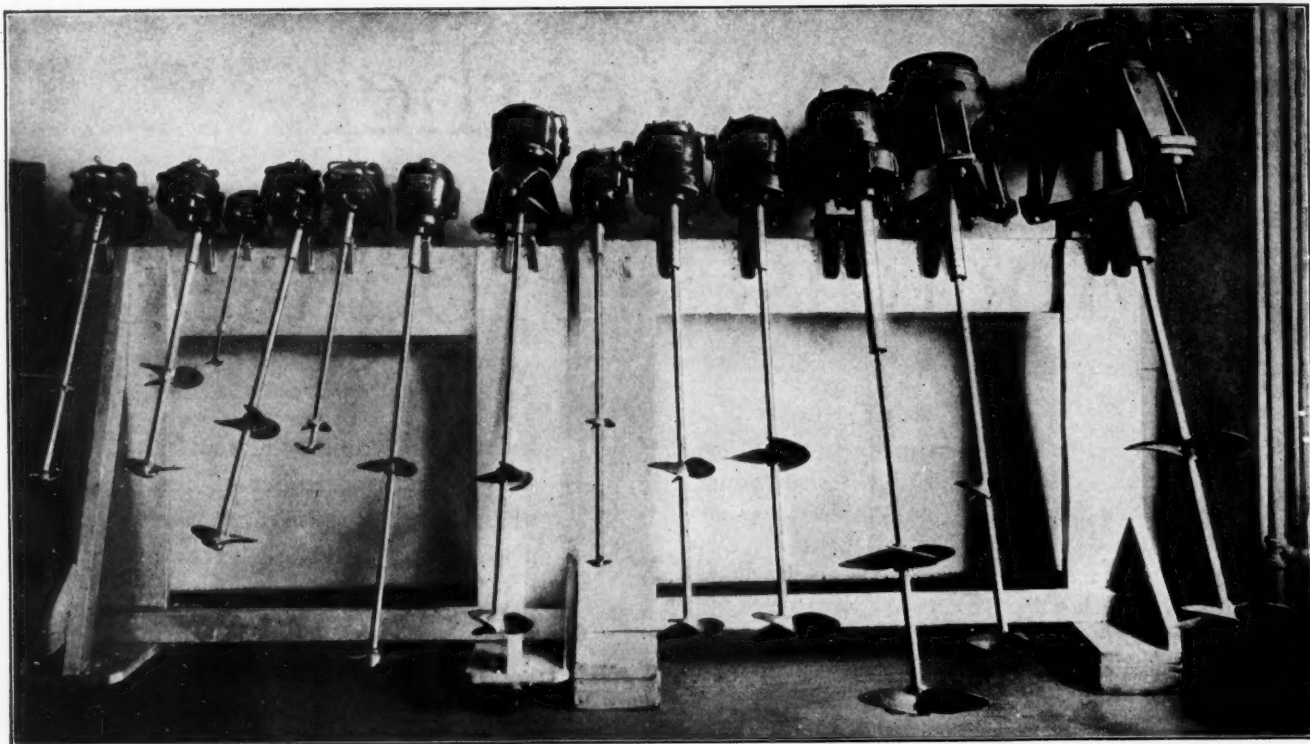
When the material to be treated contains evaporative volatiles other than water and is affected by the oxygen in the air, the process may be, and frequently is, utterly devoid of drying in the true sense, and is instead one of chemical processing.

A striking example of this is afforded by the siccativ coatings—varnishes, enamels, paints. Although the trade always refers to the *drying* of the finished varnish on the body of an automobile, for instance, the varnish, technically speaking, is not dried at all, but is hardened or fixed by the evaporation of its volatile solvents and by the oxidation of its so-called drying oil, usually linseed. In the manufacture of linoleum there is a process wherein the linseed oil alone is oxidized by exposure to conditioned air, no solvent being used, and even this purely chemical process is ordinarily referred to as drying.

A clear realization that drying is frequently processing will often lead to efficient and economical methods in place of wasteful and unsatisfactory methods now employed in many industries.



In this dipping room the air is dehumidified to prevent the condensation of moisture on rubber gloves during drying



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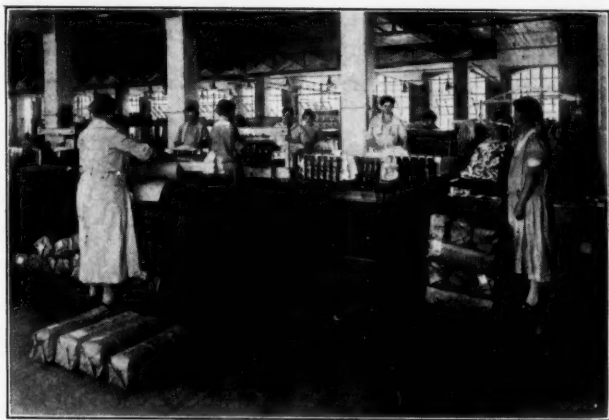
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Drying, or the removal of moisture, is practiced for several distinctly different reasons:

1. To prepare the material for processes of manufacture which require conditions obtaining only when the material is freed from all or part of its moisture.
2. To remove water which has been added in previous operations.
3. To bring materials to standard percentages of moisture content, necessary when accurate quantities are to be weighed or measured or when materials are to be mixed or packaged, since it is difficult and sometimes impossible to mix uniformly moist or damp materials, or to handle such materials automatically or expeditiously by hand.
4. To lessen storage, packing or transportation costs by removing the unnecessary constituent, water.
5. To preserve the material from physical or chemical changes induced or supported by the presence of excess moisture.
6. To bring the product to the standard commercial regain or moisture content upon which basis it is bought and sold.



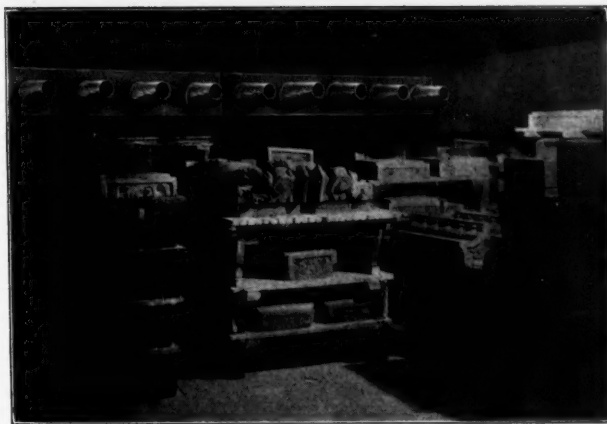
Wrapping rayon skeins for shipment, in an air-conditioned room

Drying may be accomplished by a number of different means, by draining, absorption, mechanical separation, or evaporation. Evaporation is the method involved in air-conditioning.

In drying solid substances, it is, in most cases, desirable

(Right)

In the spinning room, Viscose Company of America, conditioned air conditions the new rayon and protects the workmen



Synthetic weather has reduced the drying of terra cotta from uncertain weeks to a fixed schedule of 48 hours

to control conditions so that the rate of moisture movement or diffusion, and incidentally the rate of shrinkage, shall be uniform throughout the mass of the solid at any given time. Exposing a wet, plastic mass of clay, for instance, to a hot, dry atmosphere contracts the surface and sets up a compression upon the interior core of the mass, and the consequent strain is sure to produce cracking.

If the substance being dried has a certain amount of elasticity or plasticity, such as glue, rubber, varnish, the effect of excessive drying is to form a surface skin, commonly known as case hardening, which retards subsequent evaporation and may entirely stop the drying process. Non-uniform drying rates may also cause warping or breaking.

Strange as it may seem, most materials can be dried most quickly by moist air. For perfect drying, the rate of drying must correspond exactly with the rate of delivery of moisture from the interior to the surface of the drying mass. Moist air permits this correlation best because it does not permit the surface



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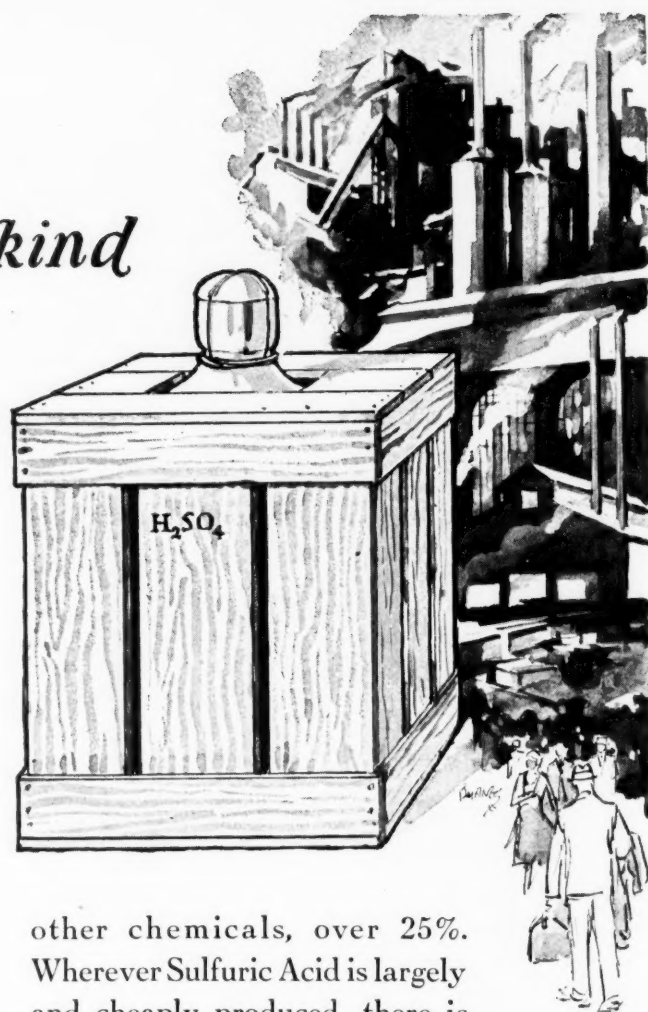
Basic among the chemical reagents of industry and most useful of all the heavy chemicals, Sulfuric Acid is a factor in the life and comfort of every human being.

In everyday life you never dream of its importance, yet from morning to night it works for you. It helps to size the very sheets of your bed, and cleans your blankets; it treats your soap, your towels and your toothpaste; has its part in the production and preparation of the clothes you wear, the food you eat, and the water you drink.

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Of the whole production of Sulfuric Acid—always used to best advantage near its source—the fertilizer industry consumes about 33%; iron and steel, 9%; metals refining, 3%; oil refining, 18%; paints and pigments, 1%; and the manufacture of



other chemicals, over 25%. Wherever Sulfuric Acid is largely and cheaply produced, there is an advantageous location for other industries.

The 300,000-ton annual production of Sulfuric Acid in St. Louis—an output capable of infinite expansion—makes this city an important national source; a magnet for other dependent industries. Here, sulfur from nearby Louisiana and Texas meets the sulfur dioxide obtained from the refining of zinc, resulting in a broad and highly competitive market.

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Investigate the great possibilities of St. Louis as a manufacturing and distributing point for any product which uses Sulfuric Acid, or any of the other heavy chemicals in which this region is so great a factor. A new "CHEMICAL AND MINERAL RESOURCE SURVEY" is available. Write Dept. C-1.

Industrial Bureau
of the Industrial Club **ST. LOUIS**

to dry too rapidly and thus prevent the passage of further moisture from the interior.

The control of the rate of drying introduces the necessity for controlled atmospheric humidity, controlled temperature, controlled air movement—in other words, air conditioning. The old, and not yet entirely abandoned methods of drying are wasteful. Slow drying in the normal atmosphere most frequently means the standing of large quantities of material representing a great investment, occupying large floor areas, and hampering the efficiency of successive operations. The earlier attempts at the forced circulation of heated air over materials resulted in an appreciable loss through breakage and spoilage caused by uncontrolled evaporation.

Not only is evaporation better understood, but the manufacturer is now able to have air-conditioned driers which automatically control and vary the conditions of temperature and humidity according to a predetermined schedule, and this in complete independence of weather and seasonal variations. The modern drier meets the schedules of the other manufacturing operations in the plant. Most often the time required for drying is greatly reduced through retarding the rate of evaporation during the early stages only to accelerate it at the proper point when the danger of injury to the material has passed. Most often, too, the modern air-conditioned drier effects a great saving in floor space.

A sanitary pottery manufacturer planned to double his production and intended to erect a new building

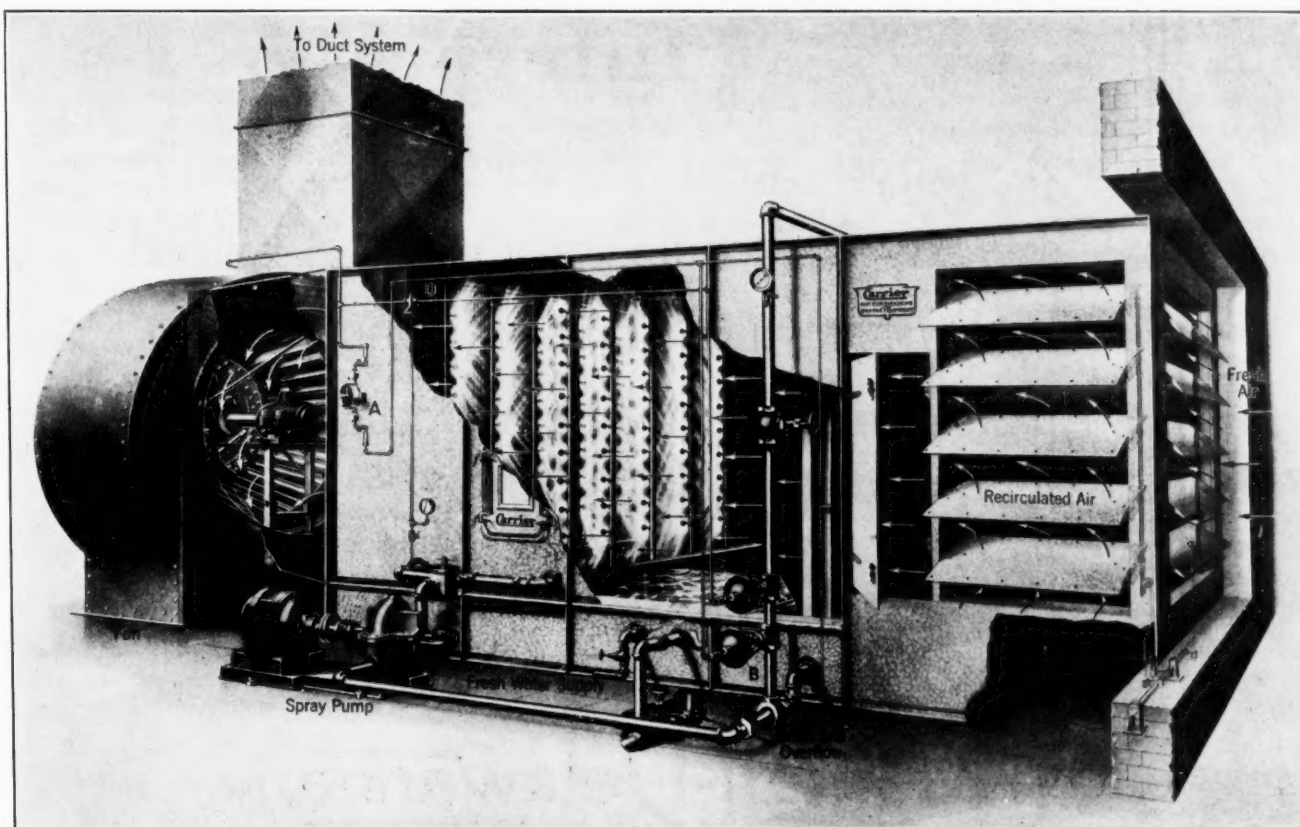
for the purpose at a cost of nearly \$200,000. Instead he installed modern drying equipment in his plant, at a cost of \$25,000, speeded up his schedule and freed enough floor space so that his production of finished material was doubled in the original quarters.

A manufacturer of roofing tile reduced his drier breakage from an average of 8 per cent to less than 0.25 per cent by installing modern drying equipment.

The effects of air conditioning as applied to manufacturing operations have been no less remarkable than those in drying and processing. Rates of production have been made uniform, production efficiency has been increased, and the quality of the product improved.

Air conditioning, or at least air humidification, is quite essential to modern textile manufacturing methods. It is used in the manufacture of cotton, silk and woolen fabrics, and is most essential in the manufacture of rayon, whose production is chiefly a series of chemical processes.

Air conditioning has made it possible to conduct cotton manufacturing in the Southern states, in the face of unfavorable climatic conditions these factories can regulate the moisture content of the cotton fibre, which fixes its physical characteristics, such as strength and pliability, and can dissipate the tremendous quantity of heat released to the air through the friction of high-speed automatic machinery, equivalent to hundreds of horsepower in relatively small space. Air conditioning has so far overcome natural climate, or rather in this instance aided it, that



A humidifier or dehumidifier, showing how the conditioned air is made to circulate



A Pleasant Scent

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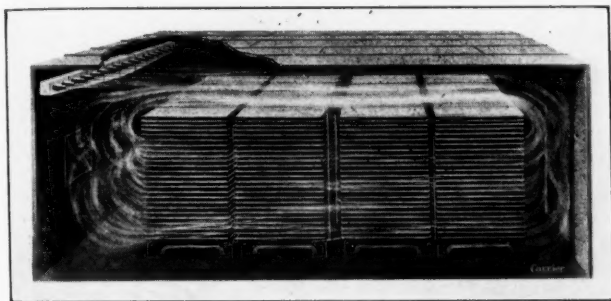
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it can be said that a conditioned Southern mill has a much greater advantage over a conditioned New England mill than an unconditioned New England mill has over an unconditioned Southern mill, since the milder natural weather makes it easier to control mill conditions.

Finally, air conditioning makes possible a standardized production routine, where drying is involved. Products dry in the same time every time, regardless of external weather, the season or the location, permitting the efficient co-ordination of every unit in the production scheme. Proper air conditioning makes every piece produced of the highest possible quality. Rubber, for example, can be dried by natural methods, but it suffers a loss in physical strength, elasticity and "life" from which air-conditioned drying saves it.

The successful and efficient drying of clay products—terra cotta, tiling and porcelain—susceptible to all the factors that govern the final state of a material from which water is being evaporated, has been made possible by air conditioning.

In moistening leather by direct dipping the tannage or coloring substances in solution, and chemicals which are not in a stable condition among the fibers below the surface, tend to be drawn to the surface and are deposited there as evaporation occurs. In conditioned air carrying a high percentage of relative humidity, leather can be softened and caused to absorb a controlled amount of moisture; thus avoiding the subsequent staining.

If drying takes place too rapidly or unevenly, at certain critical stages of the process, a brittle and scorched surface grain is formed. Too slow drying aside from delaying subsequent schedules may cause molding. Again it is a case of making the rate of surface drying correspond to the rate of moisture diffusion from the interior, possible to control only by means of air conditioning. With the proper equipment, chrome tanned leathers, calfskins, can be dried in from one to four hours depending on the weight and methods of tacking or stretching.

Artificial leathers also, fabrics coated with nitro cellulose, oils and pigments carried by solvent mixtures of ethyl acetate, benzol and alcohol, involve evaporation, but of liquids other than water. The coating must dry as rapidly as it is applied to the

fabric, and the solvent vapors must be removed quickly and their concentration controlled in order to reduce explosion and fire hazards. One company has increased its production 25 per cent by the use of air-conditioned drying and processing.



Drying flat shoe counters in air ejector dryer in a fixed schedule of four hours on one-fourth the space formerly used for a much larger period

Air conditioning was employed by the government during the war to manufacture ammonium nitrate crystals by the process of fractional crystallization. This is a common and not a difficult performance in the laboratory, but to produce 250 tons of the material a day presented difficulties. The problem was to cool the liquor, as it lay in great shallow pans, to the exact temperature of crystallization of ammonium nitrate. The control of the temperature alone presented an intricate and difficult problem, since it involved the control of evaporation and the cooling effect of evaporation, due to the transfer of latent heat. More complication was added by the need to control the rate of cooling, since upon this depends the size of the crystals. By means of air conditioning this delicate process was performed on the necessary scale of 250 tons a day with greater facility than had been achieved in a technical laboratory producing but a handful of crystals at an operation.

The testing of materials and processes is often greatly delayed and complicated under natural weather conditions, and in consequence testing laboratories are being increasingly equipped either with air conditioning for the entire room and with air-conditioned cabinets for test work. One rubber company, for instance, has a metal panelled room equipped with an air-conditioning unit, for testing rubber and tire fabrics.

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Industrial Chemicals Division

American Cyanamid Company

535 Fifth Avenue New York



Chemical Facts and Figures

Canada Increases Tariff on 130 Items

Measure to Help Unemployment—Three Classes of Duties—Chemicals Affected.

Canada increases tariff on 130 items in emergency measure to stimulate industry, increase output and decrease unemployment. General tariff revision is left to next session of Parliament. Three classes of duties are provided: British preference, which is lowest, intermediate, and general rates, which, as highest, apply to countries including United States which have no reciprocal trade agreements with Canada. Saltcake, previously free, carries a general duty of three-fifth cent per pound. General rate on casein is 27½ per cent ad valorem, plus 3 cents per pound. Manufactured fertilizers, previously free, carry general duty of 10 per cent ad valorem. Magnesite, dead burned or sintered, has new general rate of 25 per cent instead of 17½ per cent. Increased tariff will not be permitted to increase cost to consumer, according to Premier R. B. Bennett, who is also Finance Minister.

Industrial Alcohol Committee

Appointed on committee to confer with industrial alcohol officials on rules and ways that will not clash with business interests of drug chemical and allied trades are Dr. William C. Woodward, Chicago, bureau of legal medicine and legislation, American Medical Association; Harrison E. Howe, Washington, editor, Journal of Industrial and Engineering Chemistry, American Chemical Society; S. Chatfield, New York, president National Oil, Paint and Varnish Association; S. C. Henry, Chicago, secretary, National Association of Retail Druggists; C. Mahlon Kline, Philadelphia, president Smith, Kline & French; Everett B. Hurlburt, South Glastonbury, Conn., chief chemist, J. B. Williams Co.; A. Homer Smith, Philadelphia, president Sharpe & Dohme Co.; Frank M. Noonan, Boston, Noonan & Sons; R. R. Brown, New York, president United States Industrial Alcohol Corporation; Fred S. Rogers, Middletown, N. Y., McMonigle & Rogers; Charles L. Reese, Wilmington, E. I. du Pont de Nemours Co.; Martin H. Ittner, New York, Colgate-Palmolive Peet Co., chairman industrial committee of the American Chemical Society; William M. McCormick, Baltimore, president McCormick & Co.; Frank A. Blair, New York, Household Remedies Co.; Donald D. Conn, San Francisco, managing director California Vineyards Association.

Curacao, Netherlands West Indies, develops suddenly as a highly important outlet for benzol—fourth largest single-commodity chemical export of United States. New market made its first significant appearance in June of current year, when it purchased from United States 2,289,225 gallons of benzol, valued at \$491,151, in comparison with no purchases of American benzol in corresponding month of 1929, making it our second largest customer for 1930 month. In July, 1930, Curacao took first place as our most important customer with takings of 2,457,014 gallons, valued at \$502,490, as against no purchases at all in July 1929. New outlet is result of placing in operation on Island of new plant for manufacture of motor fuels. Thirty-six 80,000-barrel tanks are located at new factory, as well as loading piers enabling two ocean tankers to discharge or load at same time. Principal constituents of various motor fuel blends being turned out at new plant are gasoline from main refinery at Willemstad, together with certain imported gasolines—principally from the United States—and benzol.

Chemical Merger Movement Grows

Chemical merger movement grows swiftly, points out "Index" of New York Trust Co. "Organization of the chemical industry is highly developed and well integrated," it says. "In the United States each of the three major American companies, the Allied Chemical & Dye Corporation, E. I. du Pont de Nemours & Co. Inc., and the Union Carbide & Carbon Corporation, has its own distinctive field of operations within which it maintains a commanding position in the domestic market. Due to the large number of its by-products, interlocking markets, costly research requirements, and continuous competition with new processes and products, the chemical industry is particularly adapted to, or interested in, concentration. There is every reason to believe that the merger movement which has characterized the American industry hitherto will continue in the future.

New Freight Rates

Public Service Commission approves new freight rates of New York Central (East) on alum, carload, minimum weight 40,000 pounds, from Bronx Station, 133d street and Willis avenue, to Niagara Falls, 22c; reduction, 4.5c per cwt.; effective October 18, 1930. Commission also approves new freight rates of the New York Central (East) on copper salts (sulphate of copper), carload, from Bronx Station, 133d street and Willis avenue, to stations East Buffalo to Lewiston, inclusive, and Medina, 25c; reduction, 7c per cwt.; effective October 17, 1930. Also new freight rates of the New York Central (East) on hartsalz, kalnit, manure salts, double manure salts and sylvanit, carload, minimum weight 40,000 pounds, from Bronx Station, 133d street and Willis avenue, to stations East Syracuse to Lewiston, inclusive, Solvay to Mapleton, inclusive, 22c per cwt.; reductions; effective October 17, 1930. Commission approves new freight rates of the Delaware & Hudson Railroad on compound (road sprinkling) in barrels, carload, from Ausable Forks to Johnson, Pounds Station, Slate Hill, Unionville and West Town on Middletown and Unionville. No change in rate (28.5c per cwt.), but minimum carload weight reduced from 30,000 to 36,000 pounds. Effective October 2, 1930.

Public Service Commission approves new freight rates of New York Central (East) on soda (caustic), carload, minimum weight when in iron drums 50,000 pounds, when in barrels, 40,000 pounds and when in tank cars subject to Rule 35, from Solvay and Syracuse to Rome, 8.5c per hundredweight. These are reductions, effective September 25, 1930, by special permission of commission.

Coming Events

American Society of Mechanical Engineers, Poinsett Hotel, Greenville, S. C., October 22nd.
Association for the Advancement of Science, Cleveland, O., Dec. 29th.
National Paint & Varnish Association and American Paint & Varnish Manufacturers' Association. Royal York Hotel, Toronto, week of October 13th.
National Wholesale Druggists Association, Edgewater Beach Hotel, Chicago, October 12-16th.



THE *EXTRA* ADVANTAGE

NEVER before has an *extra* advantage counted more forcibly. Purchasing departments, yours doubtless among them, are keenly on the alert for favorable opportunities.

Buyers of E B G Liquid Chlorine receive an extra advantage. High quality of product is paramount, of course. Upon this satisfactory base has been

erected a structure of confidence. For users of this Liquid Chlorine value highly E B G integrity, intelligent cooperation and constructive service.

These intangible yet highly profitable factors constitute an extra advantage which every E B G customer enjoys.

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Main Office: 9 E. 41st St. New York
PIONEER MANUFACTURERS OF LIQUID CHLORINE

News of the Companies

U. S. Shellac Importers' Association opens shellac standardization bureau at 21 Burlinslip, New York. Bureau will test every importation of shellac to any member of association in effort to raise quality of imported article.

American Welding Co. issues new bulletins on forge welded containers for shipment of compressed gases and liquids, and forge welded storage tanks and pressure vessels for other purposes.

Leroy Frank organizes concern for fertilizer manufacture in Clearwater, Fla., primarily for fertilizer supply of Pinellas County farmers. Construction of plant will begin soon.

Standard Oil of New Jersey curtails operations in mechanical and electrical departments of Bayonne refinery on Saturdays instead of discharging men during slack seasons.

I. G. Farben announces that American oil refining company representatives are well satisfied with results of experiment made with hydrogenation process in Germany.

Triplex Safety Glass Co. of America begins production of laminated glass similar to non-shatterable windshield glass, for furniture and inside building use.

Gypsum Lime & Alabastine Products of Canada, Ltd., Montreal, reopens gypsum deposits at Island Point, B. C., subject of much litigation a few years ago.

Anderson & Thomas, Boonton, N. J. lease space in Newark building, Lincoln Highway and Meadow st., for manufacture of soap oils.

Brownlac, Ltd., formed to produce synthetic shellac by secret process invented by Robert Brownlow, discovers no secret process exists.

New Barnstead Still & Sterilizer Distilled Water Handbook describes modern use of water-distilling equipment in all fields.

Hull Co., Brooklyn, chemical manufacturers, appoints Charles S. Tanner Co., Providence as its New England representatives.

Kentucky leads world in production of fluorspar, shipping in 1929, 70,827 tons mineral fluorite, valued at \$1,390,803.

Container Corp. of America purchases Gibraltar Corrugated Paper Co., Inc., North Bergen, N. J.

Procter & Gamble elects three workers to directorate, to serve one year, representing employees.

Standard Varnish Works, New York, acquires National Varnish Co., Long Island City.

General Aniline Works makes new sulfur color, Katigen Brilliant Blue 3GA.

Raymond Bros. Impact Pulverizer Co. markets new mechanical air separator.

General Electric Co. introduces new grease for ball and roller bearing motors.

Mallinckrodt Chemical Works issues new price list.

National Safety Council Chemical Section meeting in Pittsburgh Sept. 29 to Oct. 3 features John Roach, deputy commissioner of labor, New Jersey, speaking on trend of accidents in chemical industries; A. L. Barth, du Pont, on care and use of protective equipment; P. W. Gumaer, Barrett, on ventilation of heavier-than-air vapors; and C. P. McCord, Cincinnati, on new investigation of toxicity of benzol and its impurities.

Chemical plants have been grouped on their accident frequency rates on basis of reports to Council for calendar year 1929 into four groups: the lowest rates, in the first fourth, were considered excellent, and those in succeeding fourths, good, fair and poor.

Industrial Group	Excellent	Good	Fair	Poor
Acid Manufacturing.....	0. - 8.9	9.0-18.6	18.7-23.4	23.5-up
Coal Tar Distilleries.....	0. -14.8	14.9-27.9	28.0-36.0	36.1-up
Carbon Products.....	0. - 1.2	1.3- 2.7	2.8-41.8	41.9-up
Chlorine & Alkali Mfg.....	0. - 8.6	8.7-19.9	20.0-31.3	31.4-up
Dye Manufacturing.....	0. - 7.2	7.3-17.6	17.7-26.5	26.6-up
Explosives Manufacturing....	0. - 2.2	2.3-11.4	11.5-26.3	26.4-up
Paint & Varnish Mfg.....	0. - 3.7	3.8- 5.0	5.1-21.8	21.9-up
Pharmaceutical & Fine				
Chemical Manufacturing.....	0. - 1.1	1.2-18.0	18.1-30.0	30.1-up
Soap Manufacturing.....	0. -19.3	19.4-42.3	42.4-57.2	57.3-up

Textile Evening Trade School offers course in textile chemistry, outlined fundamentally to be of practical assistance to those engaged in textile field. It includes following topics: Identification of common textile fibers, distinguishing rayon from silk and recognizing individual rayons. (Viscose, Tubize, Bemberg and Celanese), general and special processes applied to textiles and principles involved, as scouring, bleaching, mercerizing, weighting, finishing and waterproofing, etc.; also fastness tests as applied to colored fabrics and general methods of identifying dyestuffs.

Natural Products Conversion Corp. is incorporated under Delaware laws to manufacture cellulose and cellulose products under Hulbert-Small-Adkins patents, with one million shares valued at \$20,000,000. Sidney A. Witherbee, New York, is president.

Vancouver Creosoting Co., Ltd., increases capacity of North Vancouver plant 50 per cent, giving it largest cylinder capacity among 14 units associated with Canada Creosoting Co., Ltd., in turn controlled by Dominion Tar & Chemical.

Sachtleben A. G. Fuer Bergbau & Chemische-industrie closes its large zinc research laboratory at Stuerzelberg on account of low market prices on zinc, and has also shut down its lithopone plant at Marien mines, near Goslar.

Aktiengesellschaft fuer Steinkohlverfluessigung und Veredlung shuts down experimental establishment for liquefaction of coal by Bergius process, finding high pressure employed is wasteful of raw material.

Union Carbide & Carbon Co. acquires International Oxygen Co., manufacturers of compressed oxygen, hydrogen and acetylene gases, and cutting and welding tools and equipment.

Asbestos Corp., Ltd., \$1,375,000 damage suit against Keasbey & Mattison Co., New York for alleged breach of contract is postponed until April with consent of both parties.

Archer-Daniels-Midland, through purchase of Continental Baking Co.'s interest in Commander-Larabee, acquires control of one of largest capacity milling groups in country.

Murray Oil Products Co. announces addition of Paul Gerhart, formerly with A. Klipstein & Co., to be in charge of tanning and textile departments.

American Cyanamid Co. makes new sulfur strike on Lake Peigneur, La.



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PLANT—TACOMA, WASHINGTON

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LIQUID CHLORINE
BLEACHING POWDER
MURIATIC ACID
MONOCHLOROBENZENE
PARADICHLOROBENZENE
BENZOATE OF SODA
BENZOIC ACID
BENZOYL CHLORIDE



BENZYL ALCOHOL
BENZYL CHLORIDE
ANTIMONY TRICHLORIDE
FERRIC CHLORIDE
SULPHUR MONOCHLORIDE
SULPHUR DICHLORIDE
SULPHURYL CHLORIDE
SALT

HOOKER CHEMICALS

Personal and Personnel

Dr. W. F. Zimmerli, head of Commercial Development Division, New York office of Roessler & Hasslacher, is appointed head of Commercial Development Department, Niagara Falls. New appointments to Niagara Falls plant include Noah S. Davis, Alton Gabriel, H. E. Klein, Lloyd Mann, H. A. McPhail, W. T. Rinehart, W. B. Tanner, and Jane Williams.

Casper Smith, president, Smith Chemical & Color Co., Inc., New York, finds more care exercised by paint grinder in choice of colors for delivery, demand being only for materials that eliminate all troublesome features, such as coarse grinding, non-uniformity and mineral fillers. Brighter paint colors are in demand.

Per K. Frolich is awarded Grasselli Medal for 1930 by vote of Grasselli Medal Committee of American Section of Society of Chemical Industry for his work on Synthesis under High Pressure. Presentation will be made at joint meeting of Chemical Societies in New York on Nov. 7 at Columbia University.

Dr. Hugh S. Taylor, professor of physical and industrial chemistry at Princeton, speaks on "Industrial Chemistry in the New Era" at a dinner given by the Drug, Chemical and Allied Trades Section, New York Board of Trade, at Drug and Chemical Club Oct. 1.

Charles Robinson Smith, retired lawyer and one of the founders, General Chemical Co., who helped to bring about its merger with Allied Chemical and Dye Corp., and was director of combined companies, dies at Southbridge, Mass., aged 76.

J. H. Horlick, Jr., manager of service division, explosives department, Hercules Powder Co., is appointed assistant director of sales, succeeding the late Fred F. Smith. J. Barab is new service division manager.

Charles M. Richter, member of the board of directors, Pharma-Chemical Corp., is elected president, and Frederick Diehl, Sr., secretary. Both have been identified with the corporation since its organization.

Dr. W. D. Coolidge, associate director research laboratory, General Electric Co. develops 500,000-volt X-ray tube, more than twice as powerful as present tubes.

Colonel Robert Means Thompson, former president, New York Metal Exchange, dies Sept. 4 at the age of 81. He was organizer of International Nickel Corp.

Edward Rosendahl is appointed technical representative of Glyco Products Co, Brooklyn. He was formerly with Van-Ameringen-Haebler, Inc.

Dr. F. A. Kertess covers metropolitan territory on essential oils and aromatic chemicals for R. P. Dryer, Inc.

Professor H. B. Dixon, of Manchester University, one of foremost experts on explosives, dies Sept. 18, aged 78.

Harry E. Smith leaves Devoe & Reynolds to be in research laboratory of Foster Dee Snell, Consulting Chemist.

Albert J. Farmer, president, Pharma-Chemical Corp., dies Sept. 6.

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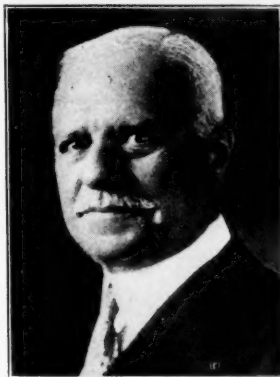
British Nitrate Expert Joins Barrett

Stanley H. Monilaws, general manager of Aikman, Ltd., of London, resigns to become the European representative of The Barrett Company. Mr. Monilaws, who has for years been in active charge of the affairs of this well known sales representative of Chile nitrate interests, has been in New York for two weeks and returns to London shortly to take up his new duties.

E. A. Cappelan-Smith, president, accompanied by A. W. Howland, vice-president, Anglo-Chilean Consolidated Nitrate Corp., visits company's properties in Chile, where he will participate in working out details of company's participation in Chilean nitrate consolidation.

John A. Spooner, merchandise manager, Viscose Co., is elected president promotional organization, Rayon Institute of America, succeeding Chester C. Bassett, Jr.

Obituaries



Daniel Guggenheim

Daniel Guggenheim, outstanding pioneer of copper and lead industry, dies Sept. 28, aged 74. As head of Guggenheim family he helped make Utah Copper first successful producer among low-grade disseminated copper mines, and open up and develop great Chile copper deposit. Gold, tin and diamonds were also mined by the family, and in later years they entered the Chile nitrate mining field. Daniel Guggenheim devoted much thought and money to aviation, also.

Charles Luedeking, connected with Mallinckrodt Chemical Works for over thirty years, dies August 25, aged 74. For fifteen years he was in charge of manufacturing at Mallinckrodt Works, St. Louis. Then he became librarian. He received an honorary A. M. from Yale University for his physico-chemical work on organic acids.



Fred F. Smith

Fred F. Smith, assistant director of sales, explosives department, Hercules Powder Co., dies Sept. 6, aged 48. He was born in Eldorado, Kansas. In 1908 he became traffic manager, Independent Powder Co., Joplin, Mo., and shortly afterward assistant sales manager. When the Independent Powder was acquired by Hercules, he went to Wilmington. For several years he was assistant sales manager, and for the last two years, assistant director of sales.

William H. Winkleman, vice-president, Home Fertilizer Co., Baltimore, dies Sept. 2, aged sixty-five.

Dr. E. Alberta Read, assistant chief chemist of the micro-analytical laboratory, Bureau of Chemistry, dies in Washington, Sept. 1.



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(Crystals)

Bichromate of Soda
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(Crystals)

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(Granular)

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(Precipitated)

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New Plant Construction

Asahi Glass Co. and Japan Soda Industry Co., only two manufacturers of soda ash now operating in Japan, plan increases in output, while South Manchurian Railway expects to build soda ash plant. Present production of first two firms is respectively 80 and 100 tons daily. That of Japan Soda Industry Co., being Government-subsidized, is to be increased soon to 150 tons per day.

Compania Industrial de Carbono, S. A., subsidiary of Carbonic Products Co., erects initial plant for manufacturing 40,000 pounds solid carbon dioxide daily at source of supply—wells 18 miles inland from Tampico, Mexico. There is enough gas, according to company officials, to manufacture 4,000,000 pounds a day.

Koppers Construction Co. assists United Chemical Industries of Soviet Union in building largest by-product coking plant in Europe at Magnitogorsk, in Southern Urals.

Forest Products Chemical Co., Memphis, Tenn., considers plans for new addition to its plant and improvements to present factory, to cost about \$40,000.

Citizens Ice Co., Toledo builds two new artificial ice plants at cost of \$500,000. Company is a subsidiary of Ice Service, Inc., of Springfield, Ohio.

Consolidated Chemical Industries, Inc., San Francisco, opens new \$300,000 pearl glue unit, to manufacture glue in form of crystalline beads.

Magnolia Petroleum Co., subsidiary of Standard Oil of New York, starts large expansion program for refinery near Luling.

Beckwith-Chandler Co., Newark, paint and varnish manufacturers, builds new factory unit to cost \$19,000.

John F. Norman Co., Inc., Linden, N. J., awards contract for construction of \$300,000 addition to plant.

General Manganese Corp. of Detroit builds 50-ton reduction mill in South Dakota manganese field.

Newport Co., Carrollville, Wis., plans new four-story addition to cost over \$150,000.

Brunswick Terminal & Railway Securities Co. closes contract with Palmer & Co. and E. J. Lavino & Co., Philadelphia, manufacturers of ferro-manganese, to co-operate in purchase of manganese properties of Georgia Manganese & Iron Co. at foreclosure sale for \$1,500,000 in bonds which Brunswick Terminal holds. New company will be formed to carry on production.

Du Pont Company Dyestuffs Department announces development of Leucosol Brown 3R Double Paste, vat color of anthraquinone series prepared especially for printing, and of Pontamine Diazo Blue NA, a direct dyeing color.

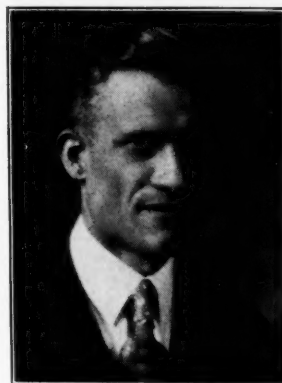
Mathieson Alkali Works are among exhibitors at Southern Textile Exposition, Greenville, S. C., in October.

Grasselli Chemical issues service bulletin on "The Effect of Lithopone on the Consistency and Settling of Paint."

Freeport Texas Co. domestic sales of sulfur for first nine months of current year exceed those of corresponding period of 1929, which was best year in its history.

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R. L. Upshur Joins Victor Chemical



R. L. Upshur

R. L. Upshur, Jr., connected for a number of years with Armour Fertilizer Works, Chicago, resigns to accept position as Manager, Fertilizer Materials Division, Victor Chemical Works, with headquarters in Chicago.

Victor Chemical will offer fertilizer manufacturers high testing triple superphosphate developed in connection with their pyrolytic phosphoric acid furnace at the Nashville works.

E. B. Swanson, acting chief, is appointed Chief Economist, Division of Petroleum Economics of U. S. Bureau of Mines. He is graduate of University of Washington. G. R. Hopkins is promoted from Associate Petroleum Economist to Economic Analyst and A. H. Redfield from Assistant Scientist to Associate Economic Analyst.

Herman A. Metz, president H. A. Metz & Co., refuses to resign from I. R. T. directorate at request of Samuel Untermeyer, special counsel to the Transit Commission, New York.

H. L. Derby, president, Kalbfleisch Corp., is renominated vice-president of National Association of Manufacturers. Annual meeting and election of officers takes place on Oct. 6.

L. G. Seebach, National Ammonia Co., Inc., is now division sales manager, New York office.

National Lead Co., New York, buys South Charleston properties of Evans-Walloway Lead Co., New York.

American Hide & Leather Co. elects Otis Glazebrook, of G. M. P. Murphy Co. director.

Du Pont Rayon Co. resumes operations at Waynesboro, Va., plant with about 60 per cent of normal force.

New Incorporations

Terminal Pharmacal, New York, chemicals—\$5,000.
General Chemical & Solvents, Inc., Brooklyn, N. Y., pharmacy—Corporation Trust Co., Wilmington, Del., 100,000 shs. com.
Hopkins Petroleum Corp., Wilmington, Del., petroleum, asphaltum, mineral gases, metals, ores—Corp. Service Co., \$500,000.
Terratile, Inc., Wilmington, Del., magnesite floors, magnesite stucco—American Guaranty & Trust Co., Wilmington, 3,000 shs. com.
Resinox Corp., Wilmington, chemicals, oils—Corp. Trust Co., Wilmington, 5,000 shs. com.
The Airkure Corp., New York, electrical and chemical appliance—Corp. Trust Co., Wilmington, 50,000 shs. com.
Southwestern States Oil and Gas Corp., New York, oil, gas, salt, brine, other mineral solutions—Prentice Hall, Inc., Dover, Del., \$1,000,000.
Naassau Chromium Plating Co., Hempstead, L. I.—Molinari, 200 shs. com.
Seaboard Natural Gas Co., Wilmington, Del., oil, gas, salt, brine, other mineral solutions—U. S. Corp. Co., Dover, Del., 25,000 shs. com.
Calcium Mining Corp. of America, New York, minerals—H. Sacher, 100 shs. com.
Premier Diamond Syndicate, New York, metallic and non-metallic metals of all kinds—Prentice Hall, Inc., Dover, Del., \$500,000, 50,000 shs. com.
Atlantic Chemical Products, Jamaica, L. I.—A. Schaffer, \$10,000.
Ivy Chemical Manufacturing Corp., Brooklyn, N. Y.—L. Lindauer, \$10,000.
Eugene Christian Products, Inc., Wilmington, Del., drugs, chemicals—American Guaranty & Trust Co., \$200,000, 30,000 shs. com.
Ozark Holding Co., Dover, Del., rock, carbon oils—Prentice Hall, Inc., Dover, Del., 1,000 shs. com.
Gilmour Steel Products Co., Wilmington, Del., metal products—American Guaranty & Trust Co., 1,000 shs. com.
National Lacquering Co., New York, paints—C. R. Treeger, 100 shs. com.
Permosone, New York, disinfectants—A. W. Feinberg, 200 shs. com.
Zenith Oil Co., Wilmington, Del., oils, other minerals—Corp. Trust Co., Wilmington, Del., 10,000 shs. com.
Oil King Mining Co., Wilmington, Del., coal, other minerals—Corp. Trust Co., Wilmington, \$5,000.

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THEY are used by your progressive competitors, because of these advantages:

As much as four times the metal content of your present drier.

No free acid.

No rosin.

Completely soluble in usual solvents.

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Only small amounts needed, hence economy.

No precipitation.

Samples and literature upon request.

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Copper Production Increases

World production of copper in August amounted to 148,321 short tons against 143,615 tons in July and 145,797 tons in June, according to American Bureau of Metal Statistics. This was at daily rate of 4,785 tons against 4,633 tons in July and 4,860 tons in June. World production in August, 1929, was 173,430 tons or a daily average rate of 5,595 tons.

Following table gives in short tons world output based upon smelter reports without segregation as to country of origin of the ore. Under "Elsewhere" is included the bureau's estimate of unreported tonnage:

	April	May	June	July	August
United States.....	76,777	75,936	69,155	67,638	66,698
Mexico.....	4,430	5,262	5,371	4,968	4,812
Canada.....	7,580	8,782	11,005	11,820	12,850
Chile and Peru.....	21,037	22,213	23,043	23,328	26,937
Japan.....	7,624	7,412	7,895	7,365	7,314
Australia.....	650	647	2,487	496	510
Germany.....	5,297	5,936	4,141		
Other Europe*.....	11,200	11,300	11,400	16,000	16,500
Elsewhere.....	11,000	11,308	11,300	12,000	12,700
World total.....	145,595	148,788	145,556	143,615	148,321

*Partly estimated.

Lacquer sales during second quarter of 1930 totaled 6,010,278 gallons with value of \$10,931,444, compared with 5,601,722 gallons valued at \$9,898,202 in first quarter, according to figures compiled by the Department of Commerce on the basis of reports from 72 manufacturers. The quarter's sales, including sales of package goods to jobbers and dealers, included 3,286,502 gallons of finishing lacquer valued at \$7,851,238, against 2,964,234 gallons valued at \$6,931,524 in the preceding quarter; 2,505,443 gallons of thinners valued at \$2,773,382, against 2,403,586 gallons valued at \$2,643,315, and 218,333 gallons of dope, not including base solutions used by others for manufacturing lacquer, valued at \$306,824, against 233,902 gallons valued at \$323,363.

STATEMENT OF THE OWNERSHIP, MANAGEMENT, CIRCULATION, ETC., REQUIRED BY THE ACT OF CONGRESS OF AUGUST 24, 1912.

Of Chemical Markets, published monthly at Pittsfield, Mass., October 1, 1930.
State of New York, County of New York—ss.

Before me, a Commissioner of Deeds in and for the State and county aforesaid, personally appeared Williams Haynes, who, having been duly sworn according to law, deposes and says that he is the Publisher of the Chemical Markets, and that the following is, to the best of his knowledge and belief, a true statement of the ownership, management (and if a daily paper, the circulation), etc., of the aforesaid publication for the date shown in the above caption, required by the Act of August 24, 1912, embodied in section 411, Postal Laws and Regulations, printed on the reverse of this form, to wit:

1. That the names and addresses of the publisher, editor, managing editor, and business managers are: Publisher, Williams Haynes, 25 Spruce St., New York, N. Y.; Editor, none; Managing Editor, W. J. Murphy, 25 Spruce St., New York, N. Y.; Business Manager, William F. George, 25 Spruce St., New York, N. Y.

2. That the owner is: (If owned by a corporation, its name and address must be stated and also immediately thereunder the names and addresses of stockholders owning or holding one per cent or more of total amount of stock. If not owned by a corporation, the names and addresses of the individual owners must be given. If owned by a firm, company, or other unincorporated concern, its name and address, as well as those of each individual member, must be given.) Chemical Markets, Inc.; 25 Spruce St., New York, N. Y.; Williams Haynes, 25 Spruce St., New York, N. Y.; William F. George, 25 Spruce St., New York, N. Y.

3. That the known bondholders, mortgagees, and other security holders owning or holding one per cent. or more of total amount of bonds, mortgages, or other securities are: (If there are none, so state.) None.

4. That the two paragraphs next above, giving the names of the owners, stockholders, and security holders, if any, contain not only the list of stockholders and security holders as they appear upon the books of the company but also, in cases where the stockholder or security holder appears upon the books of the company as trustee or in any other fiduciary relation, the name of the person or corporation for whom such trustee is acting, is given; also that the said two paragraphs contain statements embracing affiant's full knowledge and belief as to the circumstances and conditions under which stockholders and security holders who do not appear upon the books of the company as trustees, hold stock and securities in a capacity other than that of a bona fide owner; and this affiant has no reason to believe that any other person, association, or corporation has any interest direct or indirect in the said stock, bonds, or other securities than as so stated by him.

5. That the average number of copies of each issue of this publication sold or distributed, through the mails or otherwise, to paid subscribers during the six months preceding the date shown above is (This information is required from daily publications only.)

Williams Haynes, Publisher.

Sworn to and subscribed before me this 8th day of September, 1930. Margaret A. Burt (Commissioner of Deeds, N. Y. Co. Clerk's No. 70 N. Y. Reg. No. 32B2. Commission expires March 3, 1932.)

(Seal.)

The Filler Press

Leon V. Quigley, director of publicity, Bakelite Corp., presents paper on "Engineering Factors Involved in Replacement of Metals by Resinoids" at joint meeting of A. S. M. E. and A. S. S. T. in Chicago, September 23.

C. Wilbur Miller, president, Davison Chemical Co. and Silica Gel Corp., Baltimore, entertains at his country estate in Worthington Valley large party of the foreign lawyers in Baltimore for American Bar Association meeting.

American Association of Textile Chemists and Colorists holds first fall meeting Sept. 26, with Prof. H. H. Sheldon, New York University, and president of New York Electrical Society speaking on his invention the "colorscope."

Joseph P. Sullivan, Grasselli Chemical Co., Chicago, appeals, as chairman, Chemicals Group, for contributions to Salvation Army fund, asking checks be made payable to John J. Mitchell, treasurer, but mailed to him.

Lord Melchett, chairman, Imperial Chemical Industries, Ltd., is principal speaker at luncheon given Sept. 10 in his honor by Stable Money Association, an international research and educational organization.

American Chemical Society registers vigorous protest by division of chemical education against action of Governor Bilbo of Mississippi for summarily dismissing faculty members of state-supported schools.

American Pharmaceutical Manufacturers' Association prize of \$100 is divided between two students of Michigan University College of Pharmacy, Urban O. Oakdale and Joseph Thompson.

More than 3,000,000,000 gallons of purified water are consumed every year in the manufacture of Du Pont rayon, says *Du Pont Magazine*. Tests are made every hour of the day.

Dr. Lawrence W. Bass, Mellon Institute of Industrial Research, speaks on "Industrial Research and Progress" at Pittsburgh meeting, Steel Founders' Society of America, Sept. 11.

American Institute of Laundering dedicates at Joliet, Ill., million-dollar station for testing laundering equipment, methods and materials, and textiles for manufacturers.

"The Documents in the Case", a detective story by Dorothy L. Sayers and Robert Eustace, has chemical plot, with crime being solved by the polariscope.

Benn Brothers, Ltd., proprietors of *Chemical Age*, London, celebrate jubilee year during 1930, completing fifty years' work.

Dr. J. H. Payne, Roessler & Hasslacher Niagara Falls plant, takes year's leave of absence to complete studies in Germany.

John D. Ryan, chairman board, Anaconda Copper Mining Co., sails for vacation in Europe.

R. B. Bradley president Hans Hinrichs Chemical Corp., New York, returns from extended trip abroad.

Foster D. Snell is elected Fellow of the Chemical Society, London.

Pierre S. du Pont sails for Europe Sept. 19.

H. Stauffer returns from trip to California.

Dryice Corp. of America receives ownership of so-called "Hydrice" patents by decision of U. S. Court for Eastern District of New York, which restrains W. S. Josephson from licensing the manufacture and sale of "Hydrice," a combination of ice and solid carbon dioxide, in violation of contract with Dryice Corp.

I. C. C. awards rebates on twenty-nine carloads methanol freight shipped by Tionesta Valley Chemical Co., Mayburg, Pa., to Cadosia, N. Y., between April 9, 1928 and May 21, 1929. Commission finds 32 cent rate in existence before first date was reasonable for period involved.

Durium Products Co., manufacturers of flexible phonograph records, applies to N. Y. Supreme Court for injunction restraining three Columbia University professors of chemistry and physics from revealing secret processes of manufacture of records to R. C. A.—Victor Corp.

Permutit Co., New York, purchases equipment business of Paige-Jones Co., Hammond, Ind., manufacturers of chemical products and equipment, and National Aluminate Corp., Chicago, buys its chemical products business.

Cuban Mining Co., Havana, announces discovery of process for treatment of manganese ore producing cheap fertilizer sulfate, enabling users of process to sell manganese sulfate for \$8 to \$10 a ton instead of current \$40.

German nitrogen syndicate extends operations to include nitrogen chemicals for industrial use as well as fertilizers. Syndicate represents more than 98 per cent of German production of fixed nitrogen.

American Agricultural Chemical Co. elects Ralph A. Powers, executive vice-president director in place of George B. Burton, reelecting other directors.

Owens-Illinois Glass Co., Toledo, bottle manufacturers, take out group life insurance covering 7,000 employees, in insurance involving \$8,000,000.



The New Seven League Boots

By Claude Shafer in the Cincinnati Times-Star, September 11, 1930.

The CHEMICAL "400"

BEGINNING with Acetic Acid and running through the alphabetical list to Zirconium Oxide, more than four hundred metals, chemicals and compounds are supplied by The Harshaw Chemical Company. The finest raw materials from all over the world are sought out, refined, manufactured and supplied to thousands of leading firms in many industries.

Plating materials, paint driers, laundry sours, ingredients for white enamel and colors, glycerine,—these are but a hint of what you can buy from Harshaw.

The Harshaw Chemical Company
"The Chemical Department Store to Industry"
CLEVELAND, OHIO

New York, Philadelphia, Pittsburgh, Cincinnati, Chicago,
St. Louis · *Factories:* Cleveland, Philadelphia, Elyria
STOCKS IN PRINCIPAL CITIES

A PARTIAL LIST OF HARSHAW CHEMICALS

Aluminum Oleate	Lead Stearate
Resinate	Leukonin
Stearate	Magnesium
Ammonium	Carbonate
Bifluoride	Magnesium Oleate
Antimony Oxide	Magnesium Stearate
Antimony Sulphide	Manganese Oxide
(needle)	(Black)
Arsenic	Manganese Oxide
Barium Carbonate	(Recovered)
Bone Ash	Manganese Resinate
Cadmium Anodes	pp'td. & Fused
Cadmium Carbonate	Manganese Sulphate
Cadmium Hydrate	Manganese Borate
Cadmium Oxide	Nickel Anodes
Cadmium Sulphide	Nickel Ammonium
Calcium Linoleate	Sulphate
Calcium Stearate	Nickel Carbonate
Carbon Black	Nickel Chloride
Caustic Potash	Nickel Oxide
Caustic Soda	Nickel Sulphate
Ceramic Colors	Oxalic Acid
Chromic Acid	Palm Oil
Chromium Carbonate	Phosphoric Acid
Chromium Chloride	Potassium Bichromate
Chromium Oxide	Potassium Carbonate
Chromium Sulphate	Rochelle Salts
Clays	Rosin Oils
Cobalt Driers	Sodium Antimonate
Cobalt Linoleate	Sodium Cyanide
Cobalt Resinate pp'td.	Sodium Fluoride
& Fused	Sodium Nitrate
Copper Anodes	Sodium Silicate
Copper Linoleate	Sodium Silico Fluoride
Copper Oleate	Sodium Stannate
Copper Oxide	Sodium Uranate
Copper Resinate	Sulphur
pp'td.	Tri Sodium Phosphate
Cream of Tartar	Di Sodium Phosphate
Cryolite	Talc
Cyanides	Tartaric Acid
Feldspar	Tin Anodes
French Ochre	Tin Chloride Crystals
Fluorspar	Tin Oxide
Glycerine	Toning Salts
Galvanizing Salts	Uranium Nitrate
Hydrofluoric Acid	Zinc Anodes
Hydrofluosilicic Acid	Zinc Carbonate
Iron Oxide	Linoleate
Lead Acetate	Oleate
Lead Driers	Oxide
Lead Linoleate	Resinate
Lead Oleate	Stearate
Lead Resinate	Tungate

HARSHAW CHEMICALS

The Financial Markets

American Cyanamid Profit Over Four Million

**Double Last Year's Net—Company Omits Quarterly Stock
A and B Dividends Due to Depression.**

American Cyanamid Co. and subsidiaries for year ended June 30, 1930, including operating results for full year of companies acquired during year, shows net profit of \$4,618,099 after depreciation, depletion, interest, federal taxes, minority interest, etc., equivalent, after dividends paid on 6% preferred stock, to \$1.86 a share on combined 2,470,119 no-par shares of Class A and B common stock outstanding at end of period, including shares reserved for stocks not yet presented for exchange. This compares with net profit in preceding year of \$2,328,928, equal to \$3.12 a share on 661,025 average number of combined Class A and B common shares outstanding during that year and \$1.56 a share on 1,325,462 shares of combined Class A and B common outstanding at close of that year.

At the directors meeting September 12 the quarterly distributions on the A and B common stock was omitted. William B. Bell, president issued the following statement:

"Due to the continued world wide depression, the board of directors to-day decided to suspend dividend payments upon the common stock of the company. Stockholders recently have been made familiar with the condition of the company through the issuance of the annual report. The position of the company in respect to cash inventories and net assets was carefully reviewed and considered by the directors to be satisfactory even should the present depression continue throughout the current fiscal year."

Consolidated balance sheet of American Cyanamid Co. and subsidiaries as of June 30, 1930, compares as follows:

Assets			
	1930	1929	
Pit. prop and eq.....	\$42,534,672	\$35,727,190	
Cash.....	2,532,533	2,396,691	
Dem'd loans.....		1,200,000	
Notes and accts rec., etc.....	4,916,829	3,015,405	
Mark secur.....	3,271,895	1,830,142	
Inventories.....	12,252,505	5,762,924	
Other invest and adv.....	1,620,645	814,485	
Patents and processes, etc.....	\$17,130,152	\$5,068,558	
Def. chgs, dev, wk in prog, etc.....	3,047,715	1,594,467	
Total.....	\$87,306,966	\$57,409,862	
Liabilities			
Preferred stock.....	\$6,000	\$749,400	
Class A and Class B stocks.....	\$53,460,350	30,141,270	
Funded debt.....	5,982,300	5,638,000	
†Notes payable, etc.....	387,379	325,674	
Accounts payable and accrued liab.....	3,371,121	3,565,919	
Dividends payable.....	988,095	407,091	
Federal tax provision.....	131,436	194,761	
Contingent reserve.....	996,110	659,304	
Res for dep, depl of plt.....		9,134,089	
Res. for depr of pat and proc.....		2,108,515	
Sub min int.....	1,538,149	1,008	
Surplus.....	20,446,026	4,484,831	
Total.....	\$87,306,966	\$57,409,862	

*Represented by 65,943 shares of no-par Class A and 2,404,176 shares of no-par Class B stocks, including shares reserved for old common stock not yet exchanged, but excluding 207,883 shares Class B stock held by a subsidiary company. †Includes purchase money obligations. ‡After depletion, depreciation, obsolescence and renewals. §Before depreciation and depletion. ¶Includes purchased goodwill and is after depreciation. (a) Before depreciation.

New Curb Listings

The New York Curb Exchange has admitted to unlisted trading privileges the following:

Newport Co.—Rights of common stockholders to subscribe for additional shares common stock, no par value.

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Commercial Solvents Earnings Up

Commercial Solvents Corp. as of June 30, 1930, reports total assets of \$12,840,368 compared with \$13,232,771 on December 31, 1929, and earned surplus \$6,002,491 against \$5,845,413. Current assets were \$9,118,500 and current liabilities \$835,054 as compared with \$9,611,719 and \$1,702,190, respectively, at close of 1929.

Consolidated balance sheet of Commercial Solvents Corp. as of June 30, 1930, compares as follows:

Assets			
	June 30, '30	Dec. 31, '29	
*Prop. plant and equip.....	\$2,848,137	\$3,050,170	
Goodwill and patents.....	1	1	
Cash.....	5,485,237	5,986,030	
Accounts receivable.....	990,862	763,932	
Accrued interest receivable.....	5,371	9,014	
Inventories.....	2,637,030	2,852,743	
Investments.....	362,692	86,509	
Deferred charges.....	511,038	484,372	
Total.....	\$12,840,368	\$13,232,771	
Liabilities			
Capital stock.....	†\$5,682,851	\$5,571,448	
Accounts payable.....	165,756	273,220	
Accrued liabilities.....	669,299	820,471	
Dividends payable.....		608,499	
General reserve.....	319,971	118,720	
Earned surplus.....	6,002,491	5,845,413	
Total.....	\$12,840,368	\$13,232,771	

*After depreciation. †Represented by 2,481,876 no-par shares and scrip equivalent to 1,672 shares.

Report of Clorox Chemical Co. for year ended June 30, 1930, shows net income of \$380,356 after depreciation and federal taxes, equivalent to \$3.28 a share on combined 57,169 no-par shares of Class A stock, excluding 2,320 shares issued as stock dividend on July 30, 1930, and 58,800 no-par shares of Class B stock. This compares with net income in preceding year of \$463,146, equal to \$4.07 a share on combined 55,000 Class A shares and 58,800 Class B shares then outstanding.

International Printing Ink Corporation reports six months ended June 30: Consolidated net profit, after charges and taxes and deductions to cover exchange fluctuations, \$126,886, equal to \$1.84 a share on the 6 per cent preferred stock, compared with \$1,171,043, equal, after preferred dividends, to \$3.54 a share on the common stock last year.

United Chemicals, Inc., reports six months ended June 30: Surplus after charges, Federal taxes, and preferred dividends, \$108,573, equal to \$1.06 a share on the common stock, compared with \$205,271, or \$2.01 a share in the corresponding period last year.

Procter & Gamble Co. declares regular quarterly dividend of \$2 on 8% preferred, payable October 15 to stock of record September 25.

Freeport Texas Co. declares the regular quarterly dividend of \$1, payable November 1 to stock of record October 15.

Earnings At a Glance

	6 Month Period	
	1930	1929
American Cyanamid.....	\$1.86	\$3.36
International Print Ink.....	1.84	3.54
Penn Salt Mfg. Co.....	7.97	9.97
United Dyewood.....	.02	.27
U. S. Smelt. & Refin. 8 mos.....	1.85	3.36

Chemical Markets

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**For
on**

**Uniformity STANDARDIZE
du Pont Organic Chemicals**



NITROBENZENE

ANILINE

DIMETHYLANILINE

DIPHENYLAMINE

CONTINUOUS and constantly increasing production yields intermediates that are always uniform in quality and of the highest commercial purity. This is particularly true of Nitrobenzene (Oil of Mirbane) and its derivatives: Aniline, Dimethylaniline, and Diphenylamine . . . all of which have been manufactured by us in large quantities since the beginning of the Great War. You can safely standardize on du Pont Organic Chemicals for any purpose.

Organic Chemicals

E. I. DU PONT DE NEMOURS & COMPANY, Incorporated, *Intermediates Section, Wilmington, Delaware*

Colgate-Palmolive-Peet Net \$3,760,625

Colgate Palmolive-Peet Co. reports six months ending June 30, 1930. Net sales \$44,796,460; costs and expenses \$40,284,439; operating profit \$4,512,021; other income \$236,048; total income \$4,748,069; depreciation \$511,682; interest \$19,180; income taxes \$456,582; net profit \$3,760,625; preferred dividends \$439,051; common dividends \$2,489,367; surplus \$832,207.

Consolidated balance sheet of Colgate-Palmolive-Peet Co. and subsidiaries as of June 30, 1930, compares as follows:

<i>Assets</i>		<i>June 30, 1930</i>	<i>Dec. 31, 1929</i>
*Land, buildings, mach. and equipment.....		\$21,303,219	\$21,553,796
Investments, etc.....		6,782,298	7,092,454
Cash.....		4,698,686	4,790,813
Marketable securities.....		1,776,582	1,927,216
Receivables.....		12,336,771	9,383,596
Prepaid advcr., int., ins., etc.....		1,331,347	1,311,078
Inventories.....		18,735,607	17,924,691
Total.....		\$66,964,710	\$63,983,644
<i>Liabilities</i>		<i>June 30, 1930</i>	<i>Dec. 31, 1929</i>
6% preferred stock.....		\$14,703,150	\$14,317,050
†Common stock.....		24,999,310	24,999,310
Accounts payable.....		2,523,105	1,701,193
Mortgages, payable.....		10,000	10,000
Commissions, salaries, etc.....		2,164,722	2,059,005
Federal taxes.....		888,042	1,039,909
Miscellaneous and contingent taxes.....		647,659	652,931
Dividends payable.....		1,465,055	1,244,573
Special reserve.....		2,881,480	1,702,639
Empl. nts. and stk. purch. contr.....		225,619	511,651
Earned surplus.....		13,332,164	12,334,488
Paid-in surplus.....		3,124,404	3,410,895
Total.....		\$66,964,710	\$63,983,644

*After depreciation. †Represented by 1,999,970 no-par shares.

Colgate-Palmolive-Peet Co. has listed 71,700 additional shares of preferred stock for the purpose of acquiring the assets of Kirkman & Son, manufacturers of toilet and laundry soap.

Spencer Kellogg & Sons, Inc., declares quarterly dividend of 20 cents on common, payable September 30, to stock of record September 15. Previously rate was 40 cents quarterly. Present 20-cent dividend makes total disbursements to stockholders of \$1.40 for the fiscal year ended August 31, against \$1.60 in previous year.

St. Joseph Lead Co. and subsidiaries reports for six months ended June 30, 1930, profit of \$3,366,369 after depreciation, federal taxes and minority interests, equivalent to \$1.72 a share (par \$10) on 1,950,460 shares of capital stock. After deduction of \$1,340,544 for depletion, net profit was \$2,025,825 or \$1.04 a share.

Diamond Match Co. recapitalization plan provides for exchange of stock on basis of five shares \$25-par 6% participating preferred and four common shares of new company for each share now held; \$25 cash dividend on present stock likely to be declared first; sale of additional 350,000 new common shares to bankers at not less than \$30 a share planned.

Celotex Company reports eight months ended June 30: Net income after depreciation, interest and amortization, Federal taxes and other deductions, \$114,409, and deficit, after preferred and common dividends, \$472,776; surplus, June 30, \$794,335.

Glidden Co. declares quarterly dividend of 30 cents on common stock, placing issue on \$1.20 annual basis, against \$2 previously. Regular quarterly dividend of \$1.75 was declared on preferred, both dividends payable October 1 to stock of record September 18.

Monroe Chemical Co. omits quarterly dividend 37½ cents on common due at this time. Regular quarterly dividend of 87½ cents was declared on preference stock, payable October 1 to stock of record September 15.

Louisiana Oil Refining Corp. declares regular quarterly dividend of \$1.62½ on the preferred stock payable November 15 to stock of record November 1.

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Pennsylvania Salt Income Slightly Lower

Pennsylvania Salt Manufacturing Co. for year ended June 30, 1930, reports net income of \$1,195,998 after depreciation, depletion, development and research reserve, and federal taxes, equivalent to \$7.97 a share (par \$50) on 150,000 shares of stock. This compares with \$1,495,939 or \$9.97 a share in preceding year.

Consolidated income account for year ended June 30, 1930, compares as follows:

	<i>1930</i>	<i>1929</i>	<i>1928</i>	<i>1927</i>
Total inc.....	\$2,688,060	\$3,030,937	\$2,638,968	\$2,666,425
Depr. and dep.....	733,066	677,058	662,639	663,626
Rep. and renew.....	568,844	529,937	547,764	597,899
Div. and resch res.....	20,000	100,000		
Fed. tax.....	170,152	228,003	188,112	191,050
Net income.....	\$1,195,998	\$1,495,939	\$1,240,453	\$1,213,850
Divs.....	900,000	750,000	750,000	750,000
Surplus.....	\$295,998	\$745,939	\$490,453	\$463,850

Link Belt Co. declares regular quarterly dividends of 65 cents on the common, payable December 1 to stock of record November 15 and \$1.62½ on the preferred payable October 1 to stock of record September 16.

Air Reduction Co. declares extra dividend of \$1.50 and regular quarterly dividend of 75 cents, both payable October 15 to stock of record September 30. A year ago the company declared a similar extra dividend.

Sherwin Williams Co. of Canada, Ltd., declares regular quarterly dividend of 40 cents and usual bonus of 5 cents on common and regular quarterly dividend of \$1.75 on preferred, all payable September 30 to stock of record September 15.

Hercules Powder Co. declares regular quarterly dividend of \$1.75 on preferred, payable November 15 to stock of record November 4.

Montreal-Shawinigan Water & Power Co. declares the regular quarterly dividend of 62½ cents on the common, payable October 10 to stock of record September 23.

MacAndrews & Forbes, Inc., declares regular quarterly dividends of 65 cents on common and \$1.50 on preferred, both payable October 15 to stock of record September 30.

Pittsburgh—Gulf Oil Corp. has declared the regular quarterly dividend of 37½ cents, payable October 1 to stock of record September 20.

Calumet & Hecla Consolidated Copper Co. omits dividend due at this time. Three months ago a dividend of 50 cents was declared, against \$1 six months ago and \$1.50 nine months ago.

Borne Scrymser Co. declares the regular semi-annual dividend of \$1, payable October 15 to stock of record September 26.

The Will & Baumer Candle Company declares an extra dividend of 10 cents on the common stock.

Over the Counter Closing Prices

<i>September 28, 1930</i>			
<i>Dividend</i>		<i>Bid</i>	<i>Asked</i>
\$1.20 Baker, (J. T.) Chemical, com.....	13½	15½	
2.00 Bon Ami B. com.....		41	
8.00 Dixon (Joseph Crucible).....	155	165	
..... Dry Ice Holding Corp.....	47	51	
8.00 Merck Corp pfd.....	78	83	
7.00 Okonite, pfd.....	85	95	
4.00 Permutit Co. com.....	230	250	
..... Petroleum Derivatives.....	4	8	
..... Solid Carbonic Ltd.....	15½	18	
..... Southern States Oil.....	¾	¾	
..... Standard Textile Products.....		2	
5.00 Worcester Salt.....	90	95	

Chemical Markets

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ACETIC ACID

ALL GRADES



Manufactured by

BARCLAY CHEMICAL CO.

**TIONESTA VALLEY
CHEMICAL COMPANY**

**KEYSTONE WOOD
CHEMICAL AND
LUMBER CORP.**

Deliveries in **CARBOYS**

BARRELS

TANK TRUCKS

TANK CARS

**O L E A N
S A L E S
C O R P O R A T I O N**

PATERSON, N. J.

CHARLOTTE, N. C.

LAWRENCE, MASS.

Church & Dwight, Inc.

Established 1846

80 MAIDEN LANE

NEW YORK

Bicarbonate of Soda

Sal Soda

Monohydrate of Soda

Standard Quality

Procter & Gamble Profit Increases

Procter & Gamble Co. (excluding James S. Kirk & Co., recently acquired) reports for year ended June 30, 1930, net profit of \$22,450,600, including credit adjustment of prior year's tax reserve amounting to \$240,282, and after depreciation, interest, federal taxes, etc., equivalent, after deduction of preferred dividend payments, to \$3.37 a share on 6,410,000 no-par common shares. This compares with net profit in preceding year of \$19,148,933, equal to \$2.89 a share on above number of common shares.

Gross sales for year ended June 30 were \$203,365,610, against \$202,213,831 in preceding year. Current assets amount to \$87,646,446 and current liabilities \$6,452,495, as compared with \$75,106,187 and \$6,499,431, respectively, at close of previous fiscal year.

Income account (excluding James S. Kirk & Co., recently acquired) for year ended June 30, 1930, compares as follows:

	1930	1929
Net sales.....	\$192,352,591	\$193,296,721
Costs and expenses.....	165,800,982	169,296,155
Operating profit.....	\$26,551,609	\$24,000,565
Other income.....	1,485,533	530,739
Total income.....	\$28,037,142	\$24,531,305
Depreciation.....	2,515,450	2,371,813
Interest.....	483,750	488,250
Federal taxes.....	2,827,624	2,522,309
Profit.....	\$82,270,318	\$19,148,933
Adjustment of pr years' tax reserve..	*240,282	.....
Net profit.....	\$22,450,600	\$19,148,933
Preferred dividends.....	808,250	612,493
Common dividends.....	12,114,294	9,998,870
Surplus.....	\$9,528,056	\$8,537,570
Profit and loss surplus.....	68,382,975	48,694,919
*Credit		

The Nichols Copper Company, refiners, declares dividend of 75 cents a share on the Class A stock and a payment of a similar amount on the Class B shares. Previously payments had been made at a rate of 43¾ cents on the A and 75 cents on the B, the Class A dividends being payable every three months and the B distributions every six months. The provisions of the stock provide that after June 30 the Class A and Class B stocks are in all respects on a parity. Due to a lack of a quorum the meeting of directors of the Inspiration Copper Company at which dividend action was to be taken, was postponed.

Celotex Co. reports eight months ended June 30, 1930, follows: Net sales \$5,789,297; costs and expenses \$5,081,687; operating profit \$707,610; other income \$14,134; total income \$721,744; depreciation \$332,963; interest and amortization \$179,867; federal taxes \$11,500; other deductions \$83,005; net income \$114,409; preferred dividends \$279,505; common dividends \$307,678; deficit \$472,776.

National Fireproofing Corp. declares regular quarterly dividends of 75 cents each on the common and preferred stocks. The common dividend is payable November 1 to stock of record October 1 and the preferred October 15 to stock of record October 1.

Industrial Rayon Corp. and subsidiary for six months ended June 30, 1930, reports: Operating profit \$1,318,137; other income \$119,756; total income \$1,437,893; depreciation \$382,819; interest and discount \$22,422; federal taxes \$132,600; net profit \$900,052.

Armstrong Cork Company, of Lancaster, Pa., reduce annual dividend rate to \$1 from \$2 by declaring a quarterly disbursement of 25 cents a share, payable October 1 to stock of record September 17.

Anaconda Copper Mining Co. has declared quarterly dividend of 62½ cents, payable November 17 to stock of record October 11, placing stock on \$2.50 annual basis.

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U. S. Smelting Net Less Than Year Ago

U. S. Smelting, Refining & Mining Co. reports for eight months ended August 31, 1930, consolidated net profit of \$2,282,105 after interest, depreciation, depletion, amortization, etc., equivalent after dividend requirements on 7% preferred stock, to \$1.85 a share (par \$50) on 602,562 common shares outstanding at end of the period. This compares with consolidated net profit of \$3,046,509 in corresponding eight months of previous year, equal to \$3.36 a share on 568,955 average common shares outstanding during the period and \$3.08 a share on 620,562 shares outstanding at end of that period.

Consolidated income account for eight months ended August 31, 1930, compares as follows:

	1930	1929	1928	1927
Profit aft. int.....	\$4,123,443	\$4,419,964	\$3,939,012	\$3,605,000
Depr. depl. amort.....	1,841,338	1,373,455	1,569,334	1,497,426
Net profit.....	\$2,282,105	\$3,046,509	\$2,369,678	\$2,107,574
Pfd. divs.....	1,134,817	1,134,817	1,134,817	1,134,817
Surplus.....	\$1,147,288	\$1,911,692	\$1,234,861	\$972,757

U. S. Smelting, Refining & Mining Co. declares regular quarterly dividend of 25 cents on common stock and 87½ cents on preferred, both payable October 15 to stock of record October 2.

A. Hollander & Son, Inc., reports net income \$191,666 for first six months, equal to 96 cents a share after interest, depreciation, federal taxes and dividends on preferred stock of B. J. Goodman, Inc., are deducted. In same period in 1929 earnings were \$335,821 or \$1.68 a share on 200,000 no-par shares of stock.

Consolidated income account for six months ended June 30, 1930, compares as follows:

	1930	1929	1928	1927
Gross income.....	\$438,278	\$537,073	\$505,790	\$882,193
Deductions.....	119,791	48,161	134,809	231,633
Interest.....	38,204	42,417	34,382	44,014
Depreciation.....	42,594	44,994	69,500	52,000
Federal tax.....	28,523	48,180	32,052	74,863
Sub pfd divs.....	17,500	17,500	17,500	17,500
Net income.....	\$191,666	\$335,821	\$217,547	\$462,183

Following similar action in recent weeks by the Kennecott group and other copper producers, the Anaconda group has made its second cut in dividend payments this year.

Georgia Fullers Earth Co., Clarke Bros' asset, brings \$100,000 in sale by Referee Robert Stephenson.

Financial Highs and Lows

N. Y. STOCK EXCHANGE

New Highs

Colgate-Palmolive Peet pfd
Corn Products Ref pfd
Diamond Match

E. I. du Pont 6% non vat del
Mathieson Alkali Wks pfd
National Lead pfd H

New Lows

American Agr Chem
American Hide & Lea pfd
American Metal Co

International Printing Ink pfd
Kennecott Copper
Libby-Owens Glass

American Smelt & Refining
American Solvents & Chem
Anaconda
Atlantic Refining
Butte Copper & Zinc
Calumet
Corn Products
Davison Chemical
Devoe & Raynolds A
Glidden Co pfd
International Agr Chem
International Combustion
International Printing Ink

Miami Copper
National Lead
Owens Illinois Glass
Pure Oil
Revere Copper & Brass Class A
Shell Union Oil pfd
Skelly Oil
Spencer Kellogg
Standard Oil N Y
Tennessee Cop & Chem
U S Rubber
U S Rubber 1st pfd
Virginia Carolina Chem

N. Y. CURB EXCHANGE

New Lows

Acetol Prod A
Aluminum Ltd
American Cyan B
Dow Chemical

Heyden Chemical
Monroe Chemical
Newport Co
Standard Oil Indiana



Cellulose Acetate

STABILITY—LOW ACIDITY
CLARITY — UNIFORMITY

Acetic Anhydride

(90/95%)

Anhydrous Sodium Acetate

Tri-Phenyl- Phosphate

Diethyl Phthalate

Dibutyl Phthalate

Dimethyl Phthalate

Casein

for all purposes

Cresylic Acid

Spot or Contract

Associated Companies

CHAS. TENNANT & CO., Ltd.
Glasgow Belfast Dublin

BARTER TRADING CORP., Ltd.
London Brussels

Our Telephone numbers are
Ashland 2265 and 2266

AMERICAN-BRITISH CHEMICAL SUPPLIES

INCORPORATED

180 Madison Avenue
NEW YORK CITY



Industrial Chemicals

including

Acids Alums

Aluminas--Hydrate and Calcined

Ammonium Persulphate

Bleaching Powder

Caustic Soda

Chlorine--Liquid

Genuine Greenland Kryolith



PENNSYLVANIA SALT

MANUFACTURING COMPANY

Incorporated 1850

Executive Offices :

Widener Building, Philadelphia, Pa.

Representatives :

New York
Pittsburgh

Tacoma

Chicago
St. Louis

Works :

Wyandotte, Michigan

Menominee, Michigan

Tacoma, Washington

Philadelphia, Pennsylvania

Natrona, Pennsylvania

United Dyewood Reports Profit

United Dyewood Corp. reports for six months ended June 30, 1930, consolidated net profit of \$142,261 after depreciation, federal taxes, and other charges, equivalent after dividends on subsidiary shares and the 7% preferred stock, to 2 cents a share on 139,183 shares of common stock. This compares with \$187,867 or 27 cents a share on common in first half of 1929.

Consolidated income account for six months ended June 30, 1930, compares as follows:

	1930	1929
Operating profit.....	\$227,823	\$322,315
Other income (net).....	38,222	40,121
Total income.....	\$266,045	\$362,436
Depreciation.....	67,217	63,344
Federal taxes.....	29,399	65,809
Miscellaneous charges.....	27,168	27,919
General reserves.....		17,497
Net profit.....	\$142,261	\$187,867
Subsidiary dividends.....	792	117,47
Preferred dividends.....	138,250	138,250
Surplus.....	\$3,219	\$37,870

London—United Molasses Co. passed its interim common dividend owing to prevailing conditions which have led directors to adopt a cautious policy. Directors state that financial position of the company is one of great strength as there are no debentures or mortgages outstanding. For seven months ended July 31 net profit, subject to audit, amounted to £635,000 after providing for depreciation on same basis as before. Until June, the company was not affected by depression in America and elsewhere but since then demand for molasses has fallen off and freight market has weakened. Arrangement has been concluded with Distillers Co. whereby an exchange of shares at rate of two Molasses fully paid £1 common shares will be given for one fully paid £1 common share of Distillers Co. Arrangement will make it necessary for Molasses Co. to issue additional 375,000 shares of £1 par common stock.

W. H. Ross, chairman of Distillers Co., is joining the board of United Molasses and F. K. Kielberg is joining board of Distillers.

Holders of the voting trust certificates of Columbian Carbon Co. will be asked to vote on a proposed increase in authorized capital stock to 2,000,000 no-par shares from 500,000 shares. No immediate use of the additional stock is planned, according to Reid L. Carr, secretary of the company.

"The proposed increase in capital stock of the company," Mr. Carr said, "will provide stock which can be used for three purposes, namely, to be sold for cash, to be exchanged for properties, or to be used in case of a stock dividend or split-up. No immediate use of the additional stock has been decided on as yet."

Phillips Petroleum Co. and subsidiaries as of July 31, 1930, shows total assets of \$167,732,607, compared with \$145,384,954 on December 31, 1929, and earned surplus \$36,777,028, against \$34,059,513. Current assets totaled \$39,942,090 and current liabilities \$5,446,261 as contrasted with \$25,557,510 and \$6,348,615, respectively, on December 31, 1929.

Claude Neon Lights, Inc., reports new business written by themselves and associated companies in the United States in the six months ended June 30, 1930, of \$8,958,942. This figure represents new contracts placed on the books and compares with new business of \$6,406,493 written in the first six months of 1929, representing a gain of 40%.

Vanadium Corp. of America, reelects retiring directors with the exception of Charles M. Schwab, who had resigned earlier this year. No one was elected to succeed Mr. Schwab.

London—Imperial Smelting Corp., £7,500,000 combine formed about a year ago to take over National Smelting Co., declares initial common dividend of 5%, less tax.

Stock Exchange Listing

The American Agricultural Chemical Co., certificates of deposit for 284,552 shares of preferred stock (\$100 par value), 333,221 shares of common stock (\$100 par value).

The International Nickel Co. of Canada, Ltd., 825,817 additional shares of common stock without nominal or par value.

Gold Dust Corp. declares regular quarterly dividend of 62½ cents, payable November 1 to stock of record October 20.

The Diamond Match Co., certificates of deposit for 170,000 shares of capital stock (\$100 par value).

The Celotex Co., voting trust certificates for 225,194 shares of common stock without par value.

Commercial Solvents Corp., 49,670 shares of common stock without nominal or par value.

Monsanto Chemical Works, 6,248 additional shares of common stock without par value.

Applications to List

Colgate-Palmolive-Peet Co., 71,700 additional shares of 6 per cent preferred stock (\$100 par value).

Swift & Co. announce proceeds of \$30,000,000 financing will be used for most part to retire \$26,500,000 5% sinking fund notes of company due October 15, 1932, which will be called October 15, 1930, at 100¾ and accrued interest. Notes to be retired are outstanding portion of an original issue of \$50,000,000 dated October 16, 1922.

Swift & Co. now owns and operates 39 packing plants in United States and Canada, 17 fertilizer plants, 7 cotton seed oil mills, 13 shortening plants and 4 glue factories.

Pan American Petroleum & Transport Co. and subsidiaries including the Lago companies) report for six months ended June 30, 1930, profit of \$7,988,361 after depreciation, depletion, amortization and intangible development costs, but before federal taxes, comparing with \$3,985,719 in first half of 1929. Capital stock consists of 3,454,278 combined shares of common and Class B stocks.

Scovill Mfg. Co. plans to retire \$5,174,000 of an authorized amount of \$25,000,000 convertible 5½% debentures, due 1945, of which \$21,147,500 were sold in connection with acquisition of Schrader Sons, Inc., of Brooklyn. Balance was repurchased and placed in treasury. Purpose of plan is to reduce interest requirements and retirement provisions. It is proposed to issue rights to stockholders.

Barnet Leather Co., Inc., reports for quarter ended June 30, 1930, net loss of \$47,479 after taxes, depreciation, etc., comparing with net loss of \$69,782 in preceding quarter and net loss of \$384,818 in second quarter of 1929.

Net loss for six months ended June 30 totaled \$117,261 after above charges against net loss of \$541,554 in first half of previous year.

Celluloid Corp. declares regular quarterly dividends of \$1.75 each on the \$7 preferred and first preferred participating stocks, payable September 2 to stockholders of record August 11.

International Nickel of Canada declares regular quarterly dividend of 25 cents on the common, payable September 30 to stock of record September 2.

London—British Aluminum Co. declares interim common dividend of 4%, less tax, same as last year.

The Industry's Stocks

1930				1929		Sales		ISSUES	Par \$	Shares Listed	An. Rate	Earnings	
High	Low	Sept. Last	High	Low	In Sept.	During 1930	\$-per share-1929					1928	

NEW YORK STOCK EXCHANGE

128	103	105	156	103	223	77	156,800	1,493,400	Air Reduction	No	770,000	\$3.00	5.63	4.61
284	232	235	343	232	354	197	46,500	386,000	Allied Chem. & Dye	No	2,286,000	6.00	12.60	11.12
126	123	126	121	125	118	4	1,000	10,800	7% cum. pfd.	100	393,000	7.00	76.84	68.63
6	2	3	10	2	23	4	23,600	102,000	Amer. Agric. Chem.	100	333,000		Nil	1.59
38	32	32	39	23	73	18	19,500	26,300	6% cum. pfd.	100	285,000		2.47	7.86
16	14	14	33	9	55	20	27,600	155,000	Amer. Com. Ale.	No	382,000	1.60	4.78	3.39
30	21	22	51	21	81	31	17,600	275,000	Amer. Metal Co., Ltd.	No	868,000	3.00	3.23	3.58
106	105	105	117	103	135	106	1,000	2,500	conv. 6% cum. pfd.	100	69,000	6.00	47.53	26.52
71	51	53	79	51	130	162	168,200	884,700	Amer. Smelt. & Refin.	No	1,830,000	4.00	10.02	8.24
140	135	135	141	133	161	15	3,800	8,000	7% cum. pfd.	100	500,000	7.00	43.66	37.17
7	5	5	22	5	92	25	5,300	262,800	Amer. Solvents & Chem.	No	181,000		2.56	1.69
10	6	7	17	6	49	7	14,600	46,200	conv. \$3 cum. pfd.	No	113,000	3.00	8.01	6.71
62	61	79	50	111	49	4	400	285,600	Amer. Zinc Lead, & Smelt.	25	200,000		11 mo. 0.76	Nil
49	34	35	81	34	140	70	448,100	23,900	6% cum. pfd.	25	97,000	6.00	11 mo. 7.41	5.99
22	19	19	29	19	49	18	12,600	6,162,500	Anaconda Copper Mining	50	8,828,000	7.00	1928 6.63	3.37
34	24	25	51	24	77	30	126,700	234,800	Archer Dan. Midland	No	550,000	2.00	3 mo. 0.71	4.02
76	63	63	106	62	140	67	6,200	1,661,700	Atlantic Refining Co.	25	2,678,000	1.00	6.10	5.58
102	101	106	101	106	90	4	120	121,500	Atlas Powder Co.	No	260,000	4.00	7.66	4.39
1	1	2	1	12	4	2	1,200	4,380	6% cum. pfd.	100	90,000	6.00	28.25	18.76
2	2	2	4	2	9	2	7,300	54,700	Butte & Sup. Mining	10	290,000	2.00	Nil	0.28
6	5	5	15	5	32	10	4,100	85,700	Butte Copper & Zinc	5	600,000		0.34	0.31
22	21	45	20	81	45	4	600	110,100	Certain-Feed Products	No	400,000		Nil	Nil
62	53	56	64	50	90	40	11,400	5,500	7% cum. pfd.	100	63,000		9 mo. 11.38	6.77
144	112	114	199	108	344	105	63,700	70,200	Colgate-Palmolive-Peet	No	2,000,000	2.50	4.03	2.60
28	20	21	38	20	63	20	397,300	780,600	Columbian Carbon	No	457,000	4.00	7.84	6.39
94	78	78	111	78	126	70	52,700	5,091,300	Comm. Solvents	No	2,435,000	1.00	1.51	1.32
151	149	150	151	137	144	137	960	498,700	Corn Products	25	2,530,000	3.00	5.49	4.35
29	18	20	43	18	69	21	18,500	6,980	7% cum. pfd.	100	250,000	7.00	62.59	50.98
28	19	19	42	19	64	24	2,700	368,700	Davison Chem. Co.	No	504,000	1.00	3.34	1.58
107	107	107	115	99	115	102	10	54,700	Devco & Reynolds "A"	No	160,000	2.40	4.52	5.95
124	101	103	124	101	231	80	305,800	90	7% cum. 1st pfd.	100	16,000	7.00	67.59	64.02
123	119	122	123	114	119	107	7,000	2,049,200	Dupont de Nemours	20	10,339,000	4.00	6.99	5.97
221	194	195	255	175	264	150	114,400	36,200	6% cum. deb.	100	978,000	6.00	78.54	69.06
130	128	130	130	125	128	117	220	1,088,100	Eastman Kodak	No	2,263,000	5.00	1928 9.60	9.61
47	39	39	55	37	54	23	112,300	1,410	6% cum. pfd.	100	62,000	6.00	1928 326.17	326.68
43	36	36	71	36	94	42	15,400	1,021,000	Freepore Texas Co.	No	730,000	4.00	5.60	4.49
18	13	13	38	13	64	26	28,900	715,500	General Asphalt Co.	No	411,000	4.00	3.65	2.79
95	90	105	90	106	95	4	440	477,500	Glidden Co.	No	688,000	2.00	3.57	3.55
75	66	66	85	60	130	80	1,900	73,900	7% cum. prior pfd.	100	74,000	7.00	39.51	32.69
122	119	123	117	121	112	112	170	10,300	Hereules Powder Co.	No	568,000	3.00	5.95	22.04
86	76	78	124	73	135	68	1,800	2,160	7% cum. pfd.	100	114,000	7.00	38.16	35.35
6	4	4	8	4	17	4	12,400	52,300	Industrial Rayon	No	191,000		7.26	8.68
63	59	67	52	88	40	4	300	152,600	Intern. Agric.	No	444,000		0.79	1.66
27	19	19	44	19	72	25	18,000	24,000	7% cum. prior pfd.	100	100,000	7.00	10.54	14.47
41	34	36	45	34	80	61	36,800	8,204,900	Intern. Nickel	No	13,781,000	1.00	1.47	1.05
96	71	72	148	70	242	90	124,500	408,050	Intern. Salt	100	61,000	6.00	11.32	7.23
16	14	14	25	14	42	20	1,100	1,661,300	Johns-Manville Corp.	No	750,000	3.00	8.09	6.75
71	59	59	81	52	113	40	13,100	3,400	Kellogg (Spencer)	No	598,000	1.60	2.36	3.42
18	14	14	37	14	59	21	14,400	439,500	Liquid Carbonic Corp.	No	311,000	4.00	6.12	6.76
41	38	38	49	35	63	40	2,100	286,000	McKesson & Robbins	No	1,117,000	2.00	6 mo. 1.50	3.77
31	23	23	39	23	46	30	1,600	26,400	conv. 7% cum. pref.	50	426,000	3.50	6 mo. 5.13	11.51
45	35	35	51	32	72	29	36,200	273,200	MacAndrews & Forbes	No	384,000	2.60	9 mo. 2.21	3.30
134	132	134	115	125	120	120	280	601,000	Mathieson Alkali	No	637,000	2.00	3.31	2.95
48	30	33	63	30	80	47	34,900	850	7% cum. pfd.	100	28,000	7.00	93.91	84.50
34	27	27	39	24	58	15	13,900	262,400	Monsanto Chem.	No	404,000	1.25	2.83	3.76
135	121	135	121	210	129	129	6,400	186,200	National Dist. Prod.	No	275,000	2.00	1.32	Nil
142	141	142	143	138	141	138	400	82,200	National Lead	100	310,000	5.00	25.49	11.45
119	118	118	119	116	232	115	310	6,000	7% cum. "A" pfd.	100	244,000	7.00	41.95	24.10
56	54	55	50	103	143	143	1,100	3,120	6% cum. "B" pfd.	100	103,000	6.00	82.47	40.34
43	35	36	55	26	60	22	37,700	11,400	Newport \$3 cum. conv. "A"	50	130,000	3.00	29.79	5.55
75	68	68	78	52	98	43	33,000	502,900	Penick & Ford	No	434,000		3.97	2.56
20	16	16	27	16	30	20	85,600	180	7% cum. pfd.	100	33,000	7.00	73.33	53.42
112	110	114	110	116	108	108	770	453,750	Procter & Gamble	No	6,410,000	2.00	6 mo. 1.82	2.96
49	43	44	56	43	64	43	80,700	752,800	Pure Oil Co.	25	3,038,000	1.50	3.06	0.97
41	34	34	57	33	94	38	15,000	5,710	8% cum. pfd.	100	130,000	8.00	40.09	16.82
15	11	11	25	11	31	19	60,500	687,800	Royal Dutch	10	993,000		1928 24.09%	24.10%
61	54	55	75	54	31	51	108,600	286,400	St. Joseph Lead	No	1,952,000	2.00	6 mo. 2.22	2.30
70	57	57	84	57	83	48	733,200	692,900	Shell Union Oil	No	13,069,000	1.40	9 mo. 1.39	2.04
31	26	27	40	26	48	31	178,700	1,155,700	Standard Oil, Calif.	No	13,016,000	2.50	1928 3.66	3.19
12	8	9	17	8	20	9	24,900	10,299,700	Standard Oil, N. J.	25	25,419,000	1.00	1928 4.43	1.52
52	43	44	60	43	71	50	211,300	2,033,500	Standard Oil, N. Y.	25	17,380,000	1.60	1928 2.28	0.67
60	53	54	67	48	85	42	84,800	305,600	Tenn. Copper & Chem.	No	857,000	1.00	1928 1.48	0.51
82	65	65	106	60	140	59	411,700	1,386,000	Texas Corp.	25	9,851,000	3.00	4.91	5.34
53	40	40	84	40	111	40	69,500	1,147,500	Texas Gulf Sulphur	No	2,540,000	4.00	6.40	5.72
78	60	61	139	59	243	95	27,600	4,183,600	Union Carbide & Carb.	No	9,208,000	2.40	3.94	3.72
90	56	57	143	49	116	37	1,769,900	1,272,800	United Carbon Co.	No	393,000		1.75	1.99
4	2	3	8	2	24	3	7,500	968,100	U. S. Ind. Ale. Co.	No	373,000	6.00	12.63	10.29
25	24	25	34	22	65	15	8,600	6,574,000	Vanadium Corp. of Amer.	No	379,000	3.00	5.04	4.53
79	78	79	82	75	97	69	1,400	133,800	Virginia Caro. Chem.	No	479,000		Nil	0.69
40	33	34	59	30	94	30	2,200	47,200	6% cum. part. pfd.	100	214,000		3.06	7.57
								40,000	7% cum. prior pfd.	100	144,000	7.00	12.35	20.09
								42,200	Westvaco Chlorine Prod.	No	123,000	2.00	4.32	3.60

NEW YORK CURB

51	51	51	13	51	23	6	400	3,810	Acetol Prod. conv. "A"	No	60,000		1928 2.27	
19	16	16	34	16	43	15	400	17,050	Agfa Anso Corp.	No	300,000		Nil	
239	195	195	356	195	539	146	4,300	41,500	Aluminum Amer.	No	1,473,000		1928 8.03	5.00
110	109	110	105	110	103	103	2,200	37,100	6% cum. pfd.	100	1,473,000	6.00	1928 14.04	10.26
99	98	99	232	98	280	99	1,300	13,900	Aluminum Ltd.	No	573,000		1928 0.02	
21	12	12	37	12	80	20	329,900	1,875,800	Amer. Cyanamid "B"	No	1,260,000	1.60	1.56	3.68
25	22	22	43	15	45	1	6,600	206,900	Anglo-Chilean Nitrate	No	1,757,000		6 mo. Nil	Nil

1930 Sept.			1930			1929			Sales		ISSUES	Par \$	Shares Listed	An. Rate	Earnings \$-per share-\$	
High	Low	Last	High	Low	High	Low	In Sept.	During 1930		1929					1928	
3½	2	3	6½	2	35½	3		3,400	12,700	Assoc. Rayon Corp.....	No	1,200,000				
52½	46	46	60½	38½	87½	30½		5,400	38,500	conv. 6% cum. pfd.....	100	200,000	6.00			
2½	1½	...	5½	1	10½	3½		800	16,100	Brit. Celanese Am. Rets.....	105	2,200,000				
...	...	...	90	60	122	80			12,700	7% cum. part. 1st pfd.....	100	115,000	7.00	15.51	12.00	
60	60	60	90	60	100	80		100	3,485	7% cum. prior pfd.....	100	115,000	7.00	27.02	20.53	
20	20	20	20	12	50	12		200	11,500	Celluloid Corp.....	No	195,000		1.29	0.86	
...	...	...	96	70	110	82			1,150	7% cum. 1st part. pfd.	No	24,000	7.00	17.33	9.96	
69½	65	...	13½	10	25½	12			6,400	Courtaulds, Ltd.....	1½	24,000,000		19.88%	34.88%	
121½	101	101½	166½	101	209	115		400	6,600	Dow Chemical.....	No	480,000	2.00	9.83	8.06	
15	11½	...	23	11½	41½	17½		27,800	337,900	Gulf Oil.....	25	4,415,000	1.50	2.02	1.02	
8	8	...	7	4½	11½	6½		500	4,000	Heyden Chemical Corp.....	10	150,000		12.15%	10.23%	
25½	19½	...	42	19½	52	21½		200	1,900	Imperial Chem. Ind.....	1½	100,000	1.50	2.54	1.76	
67½	67½	...	79½	66½	111½	65½		12,600	5,700	Monroe Chem.....	No	405,000	2.00	3.28	1.30	
77½	77½	...	85½	74	105½	75½		100	1,900	Newport Co.....	No	1,867,000	2.50	2.35	2.17	
16	12	13	34½	12½	48½	14½			485	Sherwin-Williams Co.....	25	594,000	4.00	7.85	6.99	
49½	45½	45½	59½	45½	63	45		2,800	103,010	Silica Gel Corp.....	No	600,000				
31½	29	29	34½	28	149½	121½		124,300	1,358,600	Standard Oil Ind.....	25	13,927,000	2.50	8.33	3.26	
8	6	6	22½	6	550	111		3,800	49,500	Swift & Co.....	100	1,500,000	8.00	8.71	9.87	
32½	29	29½	44	29				2,200	33,680	Tubize "B".....	No	79,000	10.00			
47½	39½	39½	58	36½	90½	36½		800	24,100	United Chemicals.....	No	120,000	3.00	2.61		
								300		3% cum. part. pfd.....	No	765,000	1.60	3.98	7.21	
										U. S. Gypsum Co.....	20					
CLEVELAND																
94½	94	94½	138	94	98½	92		858	4,133	Cleve-Cliffs Iron.....	No	498,000	5.00	1928	8.41	3.80
78½	71	78	85	71	105½	75		902		Sherwin-Williams Co.....	25	594,000	4.00	7.85	6.99	
CHICAGO																
42½	41½	41½	46½	35	52	36		650	21,965	Abbott Labs.....	No	120,000	2.00	4.92	4.00	
8½	5½	5½	15	5½	26½	12		305		Monroe Chem.....	No	100,000	1.50	2.54	1.76	
23	19½	20½	...	...	51	30		514	4,377	\$3.50 cum. pref.....	No	30,000	3.50	13.35	10.32	
31½	29	29	33½	28	145	123		11,800		Swift & Co.....	100	1,500,000	8.00	8.71	9.87	
CINCINNATI																
75½	70	...	78½	65	100	44½		2,120	53,109	Procter & Gamble.....	No	6,410,000	2.00	6 mo. 1.82	2.90	
PHILADELPHIA																
96½	95	...	100	90	116	89		200	1,100	Pennsylvania Salt.....	50	150,000	5.00	10.64	8.27	
MONTREAL																
3½	3	...	...	...	22½	2		1,110	8,963	Asbestos Corp.....	No	200,000		Nil	Nil	
4	3½	3½	12½	3½	45	5		60	2,606	7% non-cum pfd.....	100	75,000		0.24	3.35	
72	65½	66	82½	61½	111	65		2,454	13,324	Can. Ind. Alcohol "A".....	No	969,000	1.52	1.90	2.87	
								13,602	155,052	Shawinigan W. & P.....	No	2,178,000	2.50	2.35	2.17	

The Industry's Bonds

1930 Sept.			1930			1929			In Sept.	Sales During 1930	ISSUE	Date Due	Int. %	Int. Period	Author- ized \$
High	Low	Last	High	Low	High	Low	High	Low							
NEW YORK STOCK EXCHANGE															
105 1/2	104	104 1/2	105 1/2	102 1/2	106 1/2	103			42	656	Amer. Agric. Chem., 1st ref. s. f. 7 1/2%.....	1941	7 1/2	F. A.	30,000,000
99 1/2	97	98 1/2	100 1/2	96	99 1/2	99 1/2			89	879	Amer. Cyan. deb. 5%.....	1942	5	A. O.	5,000,000
108 1/2	104	104 1/2	177	94 1/2	135	95			521	4,780	Amer. I. G. Chem. conv. 5 1/2%.....	1949	5 1/2	M. N.	30,000,000
103 1/2	102	103	104	102 1/2	102 1/2	98			274	2,748	Am. Smelt & Ref. 1st. 5% "A".....	1947	5	A. O.	38,000,000
96	91 1/2	91 1/2	98 1/2	90 1/2	100	79			90	1,611	Anglo-Chilean s. f. deb. 7%.....	1945	7	M. N.	16,500,000
103	102 1/2	...	103	100	103 1/2	99 1/2			27	667	Atlantic Refin. deb. 5%.....	1937	5	J. J.	15,000,000
105 1/2	103 1/2	104	105 1/2	100 1/2	103	98 1/2			27	286	By-Prod. Coke 1st 5 1/2% "A".....	1945	5 1/2	M. N.	8,000,000
103 1/2	103	...	104 1/2	97 1/2	103	96 1/2			18	208	Corn Prod. Refin. 1st s. f. 5%.....	1934	5	M. N.	10,000,000
79	75 1/2	77	87 1/2	74	104	76			185	3,046	Lautaro Nitrate conv. 6%.....	1954	6	J. J.	
100 1/2	99	100 1/2	100 1/2	97 1/2	100 1/2	96			134	1,973	Pure Oil s. f. 5 1/2% notes.....	1937	5 1/2	F. A.	20,000,000
90 1/2	99	...	104 1/2	97 1/2	98	90			123	820	Solvay Am. Invest. 5%.....	1942	5	M. S.	
104 1/2	103 1/2	104 1/2	104 1/2	100	103 1/2	100			392	4,349	Standard Oil, N. Y. deb. 5%.....	1946	5	F. A.	120,000,000
100 1/2	99	99 1/2	104 1/2	98	100	91 1/2			250	3,345	Standard Oil, N. Y. deb. 4 1/2%.....	1951	4 1/2	J. D.	50,000,000
102 1/2	101 1/2	101	102 1/2	97 1/2	110	88			66	774	Tenn. Copp. & Chem. deb. 6% "B".....	1944	6	M. S.	5,000,000
NEW YORK CURB															
104 1/2	103 1/2	104 1/2	104 1/2	101 1/2	103 1/2	99 1/2			157,000	841,683	Aluminum Co., s. f. deb. 5%.....	1952	5	M. S.	60,000,000
104 1/2	99 1/2	101 1/2	104 1/2	97 1/2	98 1/2	97 1/2			40,000	907,500	Aluminum Ltd., 5%.....	1948	5	J. J.	20,000,000
...	...	...	100 1/2	83 1/2	125	99				22,129	Amer. Solv. & Chem. 6 1/2%.....	1936	6 1/2	M. S.	2,200,000
63 1/2	59 1/2	63 1/2	80	57	95	60			40,000	65,138	General Ind. Alc., 6 1/2%.....	1944	6 1/2	M. N.	2,500,000
104	102	102 1/2	104	90 1/2	101 1/2	97 1/2			54,000	152,138	General Rayon 6% "A".....	1948	6	J. D.	5,400,000
103 1/2	100	103 1/2	104	100	...	93			91,000	669,342	Sinking Fund deb. 5%.....	1937	5	J. D.	35,000,000
101 1/2	100 1/2	100 1/2	103 1/2	95 1/2	100 1/2	98 1/2			309,000	463,631	Koppers G. & C. deb. 5%.....	1947	5	F. A.	35,000,000
98 1/2	98 1/2	98 1/2	98 1/2	90 1/2	94 1/2	88 1/2				1,021,447	Shawinigan W. & P. 4 1/2%.....	1947	5	J. D.	25,000,000
98 1/2	98 1/2	98 1/2	98 1/2	90	...	...			96,000	3,891,510	4 1/2% series "B".....	1967	4 1/2	A. O.	200,000,000
100	99	...	107	97	...	...			9,000	9,9150	Silica Gel Corp. 6 1/2%.....	1968	4 1/2	M. N.	25,000,000
101	100 1/2	100 1/2	101 1/2	79 1/2	102 1/2	97 1/2			87,000	219,000	Swift & Co., 5%.....	1932	6 1/2	A. O.	1,700,000
103	102 1/2	...	103 1/2	100 1/2	104	98			16,000	28,000	Westvaco Chlorine Prod. 5 1/2%.....	1944	5	J. J.	50,000,000
												1937	5 1/2	M. S.	2,500,000

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The Trend of Prices

Industrial Activity Fails to Make Important Fall Gains

Copper and Copper Salts Again Reduced—Buying Still On Hand To Mouth Basis—Contract Prices Not Yet Announced—Business Generally Shows Very Little Seasonal Improvement.

The September chemical price structure was again featured by a further reduction in the price of metallic copper to ten cents a pound. This is the lowest price that has prevailed for this commodity since 1896. In sympathy with this decrease the price structure of the copper salts reacted unfavorably, copper sulfate reaching \$4.10, and copper cyanide 41c. While some increases in tonnages are reported the general line of industrial chemicals has failed to show the gains that were expected and consumers are still operating on a hand to mouth basis. Producers are extremely hesitant about announcing contract prices for 1931 preferring to wait for some definite news of a favorable nature while consumers are loathe to commit themselves for other than immediate requirements. A bright spot is the fact that sulfur shipments have been greater this year than in the same period a year ago. The paint and lacquer fields are entering the market in a more serious way but the automobile, rayon, soap and steel industries are still disappointing. Naval stores appear weak at the close of the month with gum turpentine down a 1/2c and most of the rosins registering new low figures. Business in gums has shown some improvement specially in the several grades of Damar Batavia while the various oils are moving only in a very routine way.

In these days it is difficult to keep from blowing cold one minute and hot the next. The optimism of slight but immediate improvement prevalent in August has failed to "stay put". Events of the past month have been overshadowed by another serious and prolonged decline on the stock market, the Chicago Grain Pit and in commodity prices generally. The total value lost in stock prices during the month is estimated at \$4,500,000,000, utilities and oils leading in the decline. The chemical group loss is placed at \$400,000,000 and is only exceeded by the losses in public utilities, railroads and oils.

Steel mill operations were reported as declining during the month, the adjusted index of steel mill activity reaching 82.2 for the week ending September 27.

Business failures during the month were likewise discouraging in nature. The total number in September being 2.6% higher than August but debts were 4.5% lower according to Dun & Co.

Automobile production after showing an increase during the month of August again reacted unfavorably in the past month. The index of production stood at 53.4 on September 27 compared with 77.8 for the last week in August.

The National Fertilizer wholesale price index after three weeks of apparent stability again recorded a decline during the first three weeks of September bringing the index to 84.5 a new low for the year. The money market continues at very low figures. A brisk demand for time money at the close of the month held the rate at 2 1/2%.

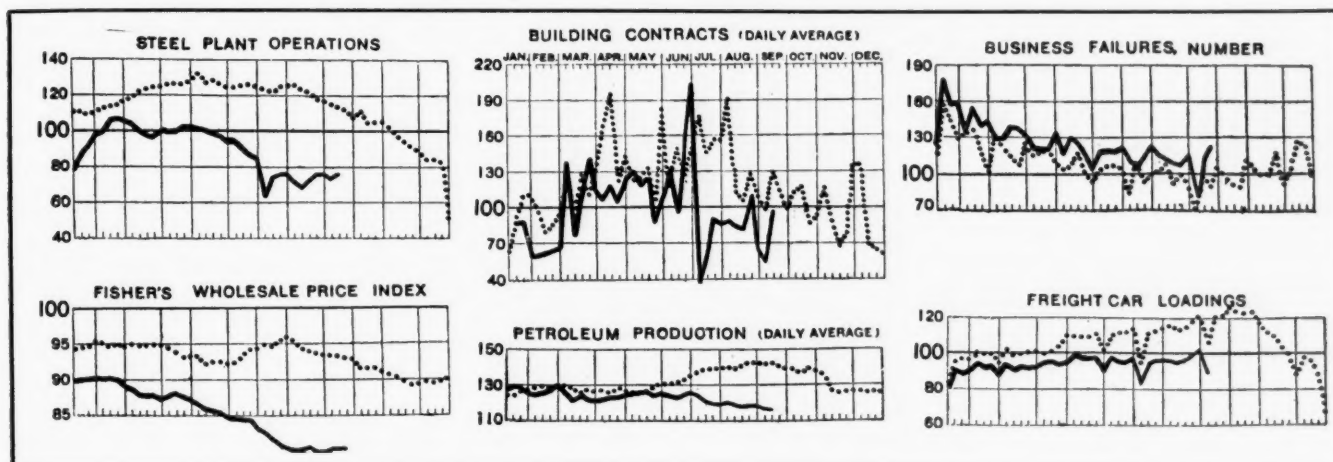
Important Price Changes

Advances	September	August
Ammonium Sulfate.....	\$1.87 1/2	\$1.82 1/2
Sodium Nitrate.....	2.02	1.99
Gum Damar Batavia.....	.15	.14 1/2
Declines		
Acid Chromic.....	\$.15 1/2 - .17	\$.16 - .18
Arsenic, white.....	.03 1/2	.04
Cellulose Acetate.....	1.05	1.10
Copper Metal.....	.10	.11
Copper Cyanide.....	.41	.44
Copper Sulfate.....	4.10	4.25
Dextrine, white.....	4.37	4.52
Ether U. S. P.....	.13	.14
Napthalene c. l. wks.....	.04 1/2	.05
Phthalic Anhydride.....	.15	.16
Resorcinol, tech.....	.90	1.00
Tin Salts: crystals.....	.27	.27 1/2
Tin Anhydrous Tetrachloride.....	.20 1/2	.20 1/2
Zinc Cyanide.....	.38	.40
Oil, China Wood tanks, Pacific coast.....	.07	.07 1/2
Oil, Corn crude, tanks mills.....	.06 1/2	.07

Indices of Business

	Latest avail.	Previous mo.	Year Ago
Automobile Production, Aug.....	223,046	262,363	498,628
†Brokers Loans.....	\$3,598	\$3,689	\$7,881
*Building Contracts, Aug.....	\$347,388	\$367,528	\$488,882
*Car Loadings, Sept. 27.....	965	856	1,153
†Commercial Paper, July 31.....	\$525	\$527	\$265
Factory Payrolls, July.....	82.0	90.3	104.8
*Mail Order Sales, Aug.....	\$46,311	\$44,655	\$52,711
Number of Failures Dun Aug.....	1,913	2,028	1,762
*Merchandise Imports, Aug.....	\$217,000	\$219,000	\$369,530
*Merchandise Exports, Aug.....	\$300,000	\$269,000	\$381,365
Furnaces in Blast % Sept. 1.....	43.7	45.3	66.0
*Steel Unfinished Orders, Aug. 31.....	3,580	4,022	3,658

*000 omitted.
†000,000 omitted.



Business indicators prepared by the Department of Commerce. The weekly average 1923-25 inclusive = 100.
The solid line represents 1930 and the dotted line 1929.

Prices Current

Heavy Chemicals, Coal-tar Products, Dye-and-Tan-stuffs, Colors and Pigments, Fillers and Sizes, Fertilizer and Insecticide Materials, Naval Stores, Fatty Oils, etc.

Chemical prices quoted are of American manufacturers for spot New York, immediate shipment, unless otherwise specified. Products sold f. o. b. works are specified as such. Imported chemicals are so designated. Resale stocks when a market factor are quoted in addition to makers' prices and indicated "second hands."

Oils are quoted spot New York, ex-dock. Quotations

f. o. b. mills, or for spot goods at the Pacific Coast are so designated.

Raw materials are quoted New York, f. o. b., or ex-dock. Materials sold f. o. b. works or delivered are so designated.

The current range is not "bid and asked," but are prices from different sellers, based on varying grades or quantities or both. Containers named are the original packages most commonly used.

Purchasing Power of the Dollar: 1926 Average—\$1.00 - 1929 Average \$1.039 - Jan. 1929 \$1.026 - Sept. 1930 \$1.193

Acetone — Nothing of special importance has taken place in the past month. Prices remain stationary with little change in the demand. The rayon industry is still operating at about half normal while the solvent field has failed to indicate any improvement. Buying is being done on a very close basis and stocks in consumers' hands are said to be at a very low point. Producers look for better shipments specially from large tonnage buyers very shortly.

Acid Acetic — The competitive position of this commodity continues unabated. While no public announcements were made during the month of lower prices all hands were in agreement that prices were being shaded on actual business. The rumor of lower acetate of lime prices at the end of the month accentuated the weak position of the acid. With consumption severely curtailed natural and synthetic producers were keenly seeking any available business. The silk dyeing industry continues to absorb fairly satisfactory quantities. Imports total 17,781,001 lbs for first seven months of the year. In the same period a year ago they were 18,141,645 lbs.

Acid Benzoic — Despite slackening demand prices have remained stationary at the 43-45c level and no further price changes appeared probable at this time.

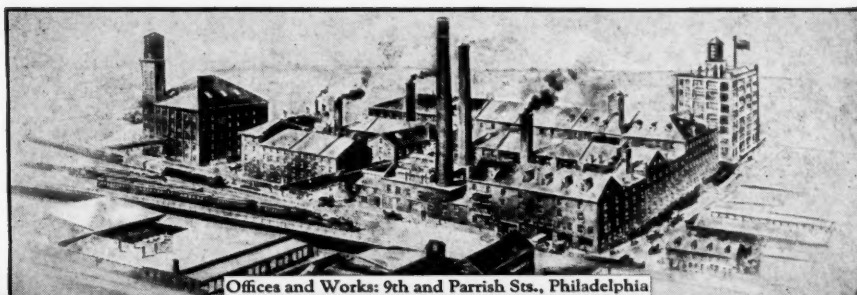
Acid Chromic — The automobile industry has signally failed to absorb the quantities of this commodity that was expected and the competitive position continues. Platers in other lines have slowed down operations. Prices are at 15½-16c level depending upon quantity and delivery point.

Acid Cresylic — Shipments against present contracts are reported as satisfactory while present price schedules are being adhered to. No changes are recorded in the British markets.

Acid Formic — Demand specially from the silk dyeing centers is steady at posted prices. In the first seven months of 1930 imports amounted to 377,470 lbs. as compared with 1,086,182 lbs last year.

Acid Gallic — The market on this commodity was reported as steady at the new prices made in August. Ink manufacturers were taking sizable quantities

1929		1928			Current Market	1930	
High	Low	High	Low			High	Low
.21	.18½	.26	.18½	Acetaldehyde, drs 1c-1 wks. .lb.	.18½	.21	.18½
.31	.27			Acetal, 50 gal dr. .lb.	.27	.31	.27
				Acetamide .lb.	1.20	1.35	1.35
.24	.21	.24	.23	Acetanilid, tech, 150 lb bbl. .lb.	.21	.23	.21
.35	.28	.35	.29	Acetic Anhydride, 92-95% .100 lb chys. .lb.	.25	.28	.25
.32	.30			Acetic, tech drums .lb.	.30	.32	.30
.16	.11	.15	.13	Acetone .lb.	.11	.12	.11
1.25	1.15	1.75	1.65	Acetone Oil, bbls NY .gal.	1.15	1.25	1.15
.68	.45	.45	.42	Acetyl Chloride, 100 lb chys. .lb.	.55	.68	.55
				Acetylene Tetrachloride (see tetrachlorethane) .lb.			
Acids							
3.88	3.88	3.88	3.38	Acid Acetic, 28% 400 lb bbls c-1 wks. .100 lb.	3.11	3.88	3.11
13.68	13.68	13.68	11.92	Glacial, bbl c-1 wk. .100 lb.	11.01	13.68	11.01
				Glacial, tanks .lb.	10.76	13.43	10.76
1.00	.98	1.00	.98	Anthranilic, refd, bbls .lb.	.98	1.00	.98
.80	.80	.80	.80	Technical, bbls .lb.	.80	.80	.80
2.25	1.60	2.25	1.60	Battery, chys. .100 lb.	1.60	2.25	1.60
.60	.51	.60	.57	Benzoic, tech, 100 lb bbls .lb.	.43	.45	.45
				Boric, chys. powd, 250 lb bbls .lb.	.06½	.07½	.06½
.07½	.05½	.11	.08½	Broenner's, bbls .lb.	1.25	1.25	1.25
1.25	1.25	1.25	1.25	Butyric, 100% basis chys. .lb.	.85	.90	.85
.90	.85	.90	.85	Camphoric .lb.	5.25	5.25	5.25
5.25	4.85	4.85	4.85	Chlorosulfonic, 1500 lb drums .lb.	.04½	.05½	.04½
.05½	.04½	.16	.15	Chronic, 99% drs extra .lb.	.15½	.17	.15½
.23	.17½	.30	.25	Chromotropic, 300 lb bbls .lb.	1.00	1.06	1.00
1.06	1.00	1.06	1.00	Citric, USP, crystals, 230 lb bbls .lb.	.46	.59	.46
.70	.46	.44½	.59	Cleve's, 250 lb bbls .lb.	.52	.54	.52
.59	.52	.97	.95	Cresylic, 95% dark drs NY .gal.	.55	.60	.55
.54	.60	.70	.68	97-99% pale drs NY .gal.	.60	.70	.60
.77	.72	.72	.72	Formic, tech 90% .140 lb chys. .lb.	.10½	.12	.10½
.12	.10½	.12	.11	Gallic, tech, bbls .lb.	.60	.70	.55
.12	.50	.55	.50	USP, bbls .lb.	.74	.74	.74
.55	.74	.74	.74	Gamma, 225 lb bbls wks. .lb.	.77	.80	.77
.80	.74	1.06	1.00	H, 225 lb bbls wks. .lb.	.65	.70	.65
.99	.80	.63	.57	Hydriodic, USP, 10% soln chys lb.	.67	.67	.67
.72	.67	.67	.67	Hydrobromic, 48% coml, 155 lb chys wks. .lb.	.45	.48	.45
.67				Hydrochloric, CP, see Acid Muriatic .lb.			
.48	.45	.48	.45	Hydrocyanic, cylinders wks. .lb.	.80	.90	.80
.90	.80	.90	.80	Hydrofluoric, 30% 400 lb bbls wks. .lb.	.06	.06	.06
.06	.06	.06	.06	Hydrofluosilicic, 35% 400 lb bbls wks. .lb.	.11	.11	.11
.11	.11	.11	.11	Hypophosphorous, 30% USP, demijohns .lb.	.85	.85	.85
.85	.85	.85	.85	Lactic, 22% dark, 500 lb bbls lb.	.04	.04½	.05
.05½	.04½	.06	.04½	44% light, 500 lb bbls .lb.	.11½	.12	.11
.12½	.11	.13½	.12	Laurent's, 250 lb bbls .lb.	.40	.42	.40
.42	.40	.54	.52	Malic, powd., kegs .lb.	.45	.60	.45
.60	.48	.60	.48	Metanilic, 250 lb bbls .lb.	.60	.65	.60
.65	.60	.65	.60	Mixed Sulfuric-Nitric tanks wks. .N unit	.07	.07½	.07
.07½	.07	.08	.07½	tanks wks. .S unit	.008	.01	.008
.01	.008	.01½	.01	Monochloroacetic, tech bbl. .lb.	.18	.21	.18
.21	.18	.21	.18	Monosulfonic, bbls .lb.	1.65	1.70	1.65
1.70	1.65	.65	.65	Muriatic, 18 deg, 120 lb chys c-1 wks. .100 lb.	1.35	1.35	1.35
1.40	1.35	1.40	1.35	tanks, wks. 100 lb.	1.00	1.00	1.00
1.00	1.00			20 degrees, chys wks. .100 lb.	1.45		1.45
.95	1.45	1.80	1.70	N & W, 250 lb bbls .lb.	.85	.95	.85
.95	.85	.95	.85	Naphthionic, tech, 250 lb .lb.	Nom.	Nom.	
.59	.55	.59	.55	Nitric, 36 deg, 135 lb chys c-1 wks. .100 lb.	5.00	5.00	5.00
5.00	5.00	5.00	5.00	40 deg, 135 lb chys c-1 wks. .100 lb.	6.00	6.00	6.00
6.00	6.00	6.00	6.00	Oxalic, 300 lb bbls wks NY .lb.	.11	.11½	.11
.11½	.11	.11½	.10½	Phosphoric 50% U. S. P. .lb.	.14	.14	.14
.14	.08	.08½	.08	Syrupy, USP, 70 lb drs .lb.	.14		.14
.16	.14	.16	.16	Commercial, tanks. .Unit.	.80	.80	.80
.70	.65	.50	.50	Picramic, 300 lb bbls .lb.	.65	.70	.65
.50	.30	.50	.40	Picric, kegs .lb.	.30	.50	.30
				Pyrogallie, crystals .lb.	1.50	1.60	1.30
1.40	.86	.86	.86	Salicylic, tech, 125 lb bbl. .lb.	.33	.37	.33
.42	.33	.32	.27	Sulfanilic, 250 lb bbls .lb.	.15	.16	.15
.16	.15	.16	.15	Sulfuric, 66 deg, 180 lb chys 1c-1 wks. .100 lb.	1.60	1.95	1.60
1.95	1.60	1.95	1.60	tanks, wks. ton	15.00	15.50	15.00
15.50	1.50	1.37½	1.20	1500 lb dr wks. .100 lb.	1.50	1.65	1.50
1.65	1.30	1.12½	1.12½	60°, 1500 lb dr wks. .100 lb.	1.27½	1.42½	1.27½
1.42½	1.27½	1.12½	1.12½	Oleum, 20%, 1500 lb. drs 1c-1 wks. .ton			
18.50	18.50	18.50	18.50		18.50	18.50	18.50



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Purchasing Power of the Dollar: 1926 Average—\$1.00 - 1929 Average \$1.039 - Jan. 1929 \$1.026 - Sept. 1930 \$1.193

to replenish depleted stocks. The U. S. P. grade remains unchanged.

Acid Lactic — The tanning industry is absorbing increasing amounts. Demand from other sources is said to be only fair.

Acid Muriatic — Producers report satisfactory volume of shipments against existing contracts but spot inquiries poor.

Acid Nitric — Producers report an increase in rate of shipments against contracts. Prices are unchanged.

Acid Oxalic — One or two of the coal companies are already taking shipments against contracts. Volume in other lines is likewise of good tonnage with prices firm and unchanged at 11-11 $\frac{1}{4}$ c. Producers are in a position to meet current demand and there is little likelihood of any shortage occurring such as happened a year ago. Imports for first seven months of 1930 amounted to 360,249 lbs. as against 410,913 lbs. in the corresponding period in 1929.

Acid Sulfuric — Shipments continue to be of a very routine nature but producers have adjusted production schedules accordingly. The fertilizer industry is operating at a very low rate for the present. No change has been announced in prices pending the opening of the contract season. Exports for first seven months total 3,377,575 lbs. against 3,882,608 lbs. in 1929.

Acid Tartaric — This commodity appears to have stabilized at the 34 $\frac{1}{2}$ -35c figure probably because of a much lessened demand. Imports for seven months amount to 1,539,744 lbs. in contrast with 1,189,061 lbs. a year ago.

Alcohol — Most producers are more optimistic now than at any time in the last few months. Small consumers are taking withdrawals at satisfactory rate and large users are beginning to show some signs of again entering the market. No change in the price structure has been announced and in most quarters the recent price weakness seems to have been corrected. Anti-freeze dealers are taking withdrawals in fairly large quantities.

Alum Ammonia and potash alums are in good demand. During the month lump ammonia and potash lump were reduced 10c a cwt. Contract prices are as yet unannounced.

Aluminum Chloride — Manufacturing consumers are taking larger shipments and spot business is improving. Prices are showing a tendency to higher levels.

Aluminum Sulfate — Prices on spot shipments remain unchanged. The paper industry has shown a keener interest and is taking material in encouraging volume.

1929				1928				Current Market	1930			
High	Low	High	Low	High	Low	High	Low		High	Low	High	Low
42.00	42.00	42.00	42.00	42.00	42.00	40%	1c-1 wks net	ton	42.00	42.00	42.00	42.00
.40	.30	.40	.30	.40	.30	Tannic, tech, 300 lb bbls.	lb.	.30	.40	.40	.30	.30
.38 $\frac{1}{2}$	.38	.38	.34 $\frac{1}{2}$	.38	.34 $\frac{1}{2}$	Tartaric, USP, crys, powd.	lb.	.34 $\frac{1}{2}$	.36	.38 $\frac{1}{2}$	.34 $\frac{1}{2}$	.34 $\frac{1}{2}$
.85	.85	.85	.85	.85	.85	300 lb bbls.	lb.	.85	.85	.85	.85	.85
2.75	2.75	2.75	2.75	2.75	2.75	Tobias, 250 lb bbls.	lb.	2.75	2.75	2.75	2.75	2.75
2.00	2.00	2.00	2.00	2.00	2.00	Trichloroacetic bottles.	lb.	2.00	2.00	2.00	2.00	2.00
2.25	1.00	1.25	1.00	1.00	1.00	Kegs.	lb.	1.40	1.70	1.70	1.40	1.40
.47	.38	.65	.43	.43	.43	Tungstic, bbls.	lb.	.38	.40	.40	.38	.38
.20	.12	.84	.78	.78	.78	Albumen, blood, 225 lb bbls.	lb.	.12	.20	.20	.12	.12
.83	.70	.80	.70	.70	.70	dark, bbls.	lb.	.70	.75	.75	.69	.69
.80	.70	.80	.70	.70	.70	Egg, edible.	lb.	.65	.70	.73	.65	.65
.65	.60	.65	.60	.60	.60	Technical, 200 lb cases	lb.	.60	.65	.65	.60	.60
.55	.50	.55	.50	.50	.50	Vegetable, edible.	lb.	.50	.55	.55	.50	.50
						Technical.	lb.					
Alcohol												
.17 $\frac{1}{2}$	.17 $\frac{1}{2}$	.20	.18 $\frac{1}{2}$	.17 $\frac{1}{2}$	.18 $\frac{1}{2}$	Alcohol Butyl, Normal, 50 gal	lb.	.17 $\frac{1}{2}$	.18 $\frac{1}{2}$	.18 $\frac{1}{2}$	.17 $\frac{1}{2}$	.17 $\frac{1}{2}$
.18 $\frac{1}{2}$	.17 $\frac{1}{2}$	.19 $\frac{1}{2}$	.18 $\frac{1}{2}$	.18 $\frac{1}{2}$	.18 $\frac{1}{2}$	drs c-1 wks.	lb.	.17 $\frac{1}{2}$	.18 $\frac{1}{2}$	.18 $\frac{1}{2}$	.17 $\frac{1}{2}$	.17 $\frac{1}{2}$
.17 $\frac{1}{2}$	.16 $\frac{1}{2}$	.19	.17 $\frac{1}{2}$	.17 $\frac{1}{2}$	.17 $\frac{1}{2}$	Drums, 1-c-1 wks.	lb.	.16 $\frac{1}{2}$	.17 $\frac{1}{2}$	.17 $\frac{1}{2}$	.16 $\frac{1}{2}$	.16 $\frac{1}{2}$
1.67	1.67	2.25	1.75	1.67	1.67	Tank cars wks.	lb.	1.67	1.67	1.67	1.67	1.67
1.80	1.42	1.80	1.70	1.80	1.70	Any (from pentane)	gal.	1.42	1.60	1.60	1.42	1.42
2.75	2.69 $\frac{1}{2}$	3.70	2.65	2.75	2.65	Diacetone, 50 gal drs del.	gal.	2.63	2.75	2.75	2.63	2.63
.71	.71	.65	.50	.71	.65	Ethyl, USP, 190 pf, 50 gal	gal.	.56	.60	.71	.56	.56
.52	.49	.52	.48 $\frac{1}{2}$	.52	.48 $\frac{1}{2}$	bbls.	gal.	.40	.44	.51	.40	.40
.51	.48	.50	.43	.51	.43	Anhydrous, drums.	gal.	.40	.44	.50	.40	.40
.50	.46	.46	.41	.50	.41	Completely denatured, No. 1,	gal.	.37	.38	.48	.37	.37
1.30	1.00	1.25	1.00	1.30	1.00	188 pf, 50 gal drs drums	gal.	.60	1.00	1.00	.60	.60
1.00	1.00	1.00	1.00	1.00	1.00	extra.	gal.	1.00	1.00	1.00	1.00	1.00
.82	.80	.82	.80	.82	.80	No. 5, 188 pf, 50 gal drs	gal.	.80	.82	.82	.80	.80
.65	.65	.65	.65	.65	.65	drums extra.	gal.	.65	.65	.65	.65	.65
.34	.32	.37	.35	.34	.35	Tank, cars.	gal.	.32	.34	.34	.32	.32
3.50	3.25	3.30	3.25	3.50	3.25	Isopropyl, ref, gal drs.	gal.	3.20	3.50	3.50	3.20	3.20
5.50	5.00	5.50	5.25	5.50	5.25	Propyl Normal, 50 gal dr.	gal.	4.50	5.25	5.25	4.50	4.50
3.50	3.00	3.20	3.10	3.50	3.10	Aldehyde Ammonia, 100 gal dr lb	lb.	3.10	3.50	3.50	3.10	3.10
3.75	3.75	3.75	3.75	3.75	3.75	Alpha-Naphthol, crude, 300 lb	lb.	3.75	3.75	3.75	3.75	3.75
24.30	24.30	26.00	24.30	24.30	24.30	bbls.	lb.	24.30	24.30	24.30	24.30	24.30
.20	.05	.40	.35	.20	.35	Alpha-Naphthylamine, 350 lb	lb.	.05	.15	.15	.05	.05
.18	.17	.18	.17	.18	.17	bbls.	lb.	.17	.18	.18	.17	.17
.26	.25	.24	.18	.26	.18	Alum Ammonia, lump, 400 lb	lb.	.24 $\frac{1}{2}$	.25 $\frac{1}{2}$	.26	.24 $\frac{1}{2}$	.24 $\frac{1}{2}$
2.05	1.95	1.75	1.75	2.05	1.95	bbls.	lb.	1.95	2.05	2.05	1.95	1.95
1.40	1.40	1.40	1.40	1.40	1.40	Chloride Anhydrous.	lb.	1.40	1.40	1.40	1.40	1.40
1.15	1.15	1.15	1.15	1.15	1.15	Hydrate, 96%, light, 90 lb	lb.	1.15	1.15	1.15	1.15	1.15
						bbls.	lb.					
						Stearate, 100 lb bbls.	lb.					
						Sulfate, iron, free, bags c-1	lb.					
						wks.	100 lb.					
						Coml, bags c-1 wks.	100 lb.					
						Aminoazobenzene, 110 lb kegs lb.	lb.					
Ammonium												
.14 $\frac{1}{2}$	.14	.14	.13 $\frac{1}{2}$	.14 $\frac{1}{2}$	.13 $\frac{1}{2}$	Ammonia anhydrous Com. tanks	lb.	.05 $\frac{1}{2}$	.05 $\frac{1}{2}$	.05 $\frac{1}{2}$	.05 $\frac{1}{2}$	.05 $\frac{1}{2}$
.03 $\frac{1}{2}$	.03 $\frac{1}{2}$	.03	.03	.03 $\frac{1}{2}$	.03	Ammonia, anhyd, 100 lb cyl.	lb.	.15 $\frac{1}{2}$	.15 $\frac{1}{2}$	.15 $\frac{1}{2}$	.15 $\frac{1}{2}$	.15 $\frac{1}{2}$
6.50	5.15	5.15	4.45	6.50	4.45	Water, 26 $\frac{1}{2}$, 800 lb dr del.	lb.	.02 $\frac{1}{2}$	.02 $\frac{1}{2}$	.02 $\frac{1}{2}$	.02 $\frac{1}{2}$	.02 $\frac{1}{2}$
.22	.21	.22	.21	.22	.21	Ammonia, aqua 26 $\frac{1}{2}$ tanks.	lb.	.28	.39	.39	.28	.28
.12	.09	.09	.08 $\frac{1}{2}$	.12	.08 $\frac{1}{2}$	Acetate.	lb.	.28	.39	.39	.28	.28
5.15	4.45	5.15	4.45	5.15	4.45	Bicarbonate, bbls., f.o.b. plant	lb.	5.15	5.15	5.15	5.15	5.15
5.75	5.25	5.75	5.25	5.75	5.25	Bifluoride, 300 lb bbls.	lb.	.21	.22	.22	.21	.21
.11 $\frac{1}{2}$	.11	.11 $\frac{1}{2}$	.11	.11 $\frac{1}{2}$	.11	Carbonate, tech, 500 lb cs.	lb.	.09	.12	.12	.09	.09
.16	.15	.16	.15	.16	.15	Chloride, white, 100 lb bbls	lb.	4.45	5.15	5.15	4.45	4.45
.10	.06	.10	.06	.10	.06	wks.	100 lb.	5.25	5.75	5.75	5.25	5.25
.34	.26	.38	.27 $\frac{1}{2}$	.34	.27 $\frac{1}{2}$	Gray, 250 lb bbls wks.	lb.	.11	.11 $\frac{1}{2}$	.11 $\frac{1}{2}$	.11	.11
.13	.12 $\frac{1}{2}$	.18	.18	.13	.18	Lump, 500 lb cks spot.	lb.	.15	.16	.16	.15	.15
2.40	2.05	2.90	2.20	2.40	2.20	Lactate, 500 lb bbls.	lb.	.06	.10	.10	.06	.06
2.45	2.05	3.00	2.50	2.45	2.50	Nitrate, tech, casks.	lb.	.26	.30	.30	.26	.26
60.85	52.40	60.85	60.85	60.85	60.85	Nitrate, 112 lb kegs.	lb.	.11 $\frac{1}{2}$	.12	.13	.11 $\frac{1}{2}$	.11 $\frac{1}{2}$
.48	.36	.60	.55	.48	.55	Phosphate, tech, powd, 325 lb	lb.	2.05	2.10	2.10	1.82 $\frac{1}{2}$	1.82 $\frac{1}{2}$
1.70	1.60	2.25	1.72	1.70	1.72	bbls.	lb.	1.82 $\frac{1}{2}$	2.10	2.10	1.82 $\frac{1}{2}$	1.82 $\frac{1}{2}$
.24	.23	.....	.....	.24	.....	Sulfate, bulk c-1.	100 lb.	57.60	57.60	57.60	57.60	57.60
.16 $\frac{1}{2}$	.15	.16 $\frac{1}{2}$	.15 $\frac{1}{2}$	.16 $\frac{1}{2}$	.15 $\frac{1}{2}$	Southern points.	100 lb.	.48	.48	.48	.48	.48
.37	.34	.48	.41	.37	.41	Nitrate, 26% nitrogen	31.6% ammonia imported	.23	.24	.24	.23	.23
.90	.80	1.00	.90	.90	.90	bags c. i. f.	ton	5.00	5.00	5.00	5.00	5.00
.10	.08 $\frac{1}{2}$	.12	.09 $\frac{1}{2}$	.10	.09 $\frac{1}{2}$	Sulfoeyanide, kegs.	lb.	.15	.16	.16	.15	.15
.10	.09	.12	.10	.10	.10	Amyl Acetate, (from pentane)	lb.	.34	.37	.37	.34	.34
.18	.13	.18	.17	.18	.17	Tech., drs.	lb.	.50	.55	.90	.50	.50
.10	.08 $\frac{1}{2}$	.12	.09 $\frac{1}{2}$	.10	.09 $\frac{1}{2}$	Alcohol, see Fusel Oil.	lb.	.06 $\frac{1}{2}$	.07	.09 $\frac{1}{2}$	.06 $\frac{1}{2}$	.06 $\frac{1}{2}$
.26	.24	.....	.16	.26	.16	Furoate, 1 lb tins.	lb.	.08	.08	.09 $\frac{1}{2}$	.08	.08
.20	.16	.....	.16	.20	.16	Aniline Oil, 960 lb drs.	lb.	.13	.17	.17	.13	.13
.42	.38	.42	.38	.42	.38	Annatto, fine.	lb.	.08 $\frac{1}{2}$	.08 $\frac{1}{2}$	.08 $\frac{1}{2}$	.07 $\frac{1}{2}$	.07 $\frac{1}{2}$
.19	.17	.19	.17	.19	.17	Anthraquinone, sublimed, 125 lb	lb.	.16	.20	.20	.16	.16
.14	.12	.14	.12	.14	.12	bbls.	lb.	.38	.42	.42	.38	.38
.16	.12	.16	.15	.16	.15	Antimony, metal slabs, ton lots	lb.	.17	.19	.19	.17	.17
.18 $\frac{1}{2}$	.18 $\frac{1}{2}$	.16	.15	.18 $\frac{1}{2}$	.15	Needle, powd, 100 lb cs.	lb.	.12	.14	.14	.12	.12
.08	.08	.08	.08	.08	.08	Chloride, soln (butter of)	lb.	.12	.14	.14	.12	.12
.....	.....	.....	.....	.....	.....	crys.	lb.	.12	.14	.14	.12	.12
						Oxide, 500 lb bbls.	lb.	.08	.08 $\frac{1}{2}$	.08 $\frac{1}{2}$	.07 $\frac{1}{2}$	.07 $\frac{1}{2}$
						Salt, 66% tins.	lb.	.16	.20	.20	.16	.16
						Sulfuret, golden, bbls.	lb.	.38	.42	.42	.38	.38
						Vermilion, bbls.	lb.	.17	.19	.19	.17	.17
						Archil, cone, 600 lb bbls.	lb.	.12	.14	.14	.12	.12
						Double, 600 lb bbls.	lb.	.12	.14	.14	.12	.12
						Triple, 600 lb bbls.	lb.	.12	.14	.14	.12	.12
						Argols, 80% casks.	lb.	.08	.08	.08	.08	.08
						Crude, 30% casks.	lb.	.20	.40	.40	.20	.20
						Aroclors, wks.	lb.					

Borax



Boric Acid

ACIDS
BATTERY
NITRIC
MURIATIC
SULFURIC
TARTARIC

CARBON TETRA CHLORIDE
CAUSTIC SODA
TITANIUM TETRA CHLORIDE
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Prices Current and Comment

Purchasing Power of the Dollar: 1926 Average—\$1.00 - 1929 Average \$1.039 - Jan. 1929 \$1.026 - Sept. 1930 \$1.193

Ammonia Anhydrous — A steady undertone on prices features this market despite a seasonal slackening from the refrigerating trade. Producers report a very satisfactory volume over the summer season. Exports for first seven months of 1930 amounted to 1,574,703 lbs. in contrast with 1,541,192 lbs. a year ago.

Ammonia Aqua — Prices are firm with no change in the demand.

Ammonium Chloride — Radio manufacturers are showing a much keener interest and shipments have been very encouraging.

Ammonium Sulfate — Indications are that the new price schedule announced last month is being strictly adhered to. The October price is \$37.50 a ton, Atlantic or Gulf ports. Buyers are in most instances covering only immediate requirements and the market in general has been dull and lifeless. Export prices have not been announced as yet.

Aniline — Some improvement is noted in demand and prices are steady. Tanks are quoted at 14½-15c.

Antimony — The metal is quiet and easier, with spot prices duty paid quoted at 7.65 to 7.70c per lb., f. o. b. New York and shipment from China 5½c per lb c. i. f. New York.

Arsenic — White was reduced ¼c in some quarters during the month. Manufacturers report at the close of the insecticide season satisfactory volume. Sales in the glass industry are reported better. Producers are said to be booking some business now for 1931.

Barytes — With firm prices prevailing consumer interest became broader and tonnages were said by producers to be increasing satisfactorily.

Benzol — Firmer prices ruled in this market during the past month due to a reduction of stocks on hand and a slightly better inquiry from consuming channels. In the metropolitan section 90% is quoted at 21c in tanks and drums carloads 26c f. o. b. works.

Betanaphthol — Producers are receiving better inquiry and prices are firm, technical bringing 22c in tank cars.

Bleaching Powder — Situation remains unaltered as to price and demand.

Butyl Acetate — With the automobile factories operating below 50% capacity the lacquer demand has been light which reflects in butyl acetate shipments. The radio and furniture trades have shown up better in the last sixty days but demand is still a long ways from being of satisfactory volume. Consumers are holding off buying in small quantities preferring to wait some definite action on business before obligating themselves on future

1929		1928		Current Market	1930			
High	Low	High	Low		High	Low		
.11	.09	.11	.10½	Arsenic, Red. 224 lb kegs, cs. .lb.	.09½	.10	.11	.08½
.04½	.04	.04	.03½	White, 112 lb kegs.....lb.	.03½	.04½	.04½	.03½
15.00	4.75	14.75	14.75	Asbestine, c-1 wks.....ton	15.00	15.00	15.00	15.00
Barium								
60.00	57.00	57.00	47.00	Barium Carbonate, 200 lb bags	58.00	60.00	60.00	58.00
.15	.14	.12½	.12	wks.....ton	.14	.15	.15	.14
69.00	63.00	65.00	54.00	Chlorate, 112 lb kegs NY.....lb.	63.00	69.00	69.00	63.00
.13	.12	.13½	.13	Chloride, 600 lb bbl wks.....ton	.12	.13	.13	.12
.05½	.04½	.04½	.04½	Dioxide, 88%, 690 lb drs.....lb.	.04½	.05½	.05½	.04½
.08½	.08	.08	.07½	Hydrate, 500 lb bbls.....lb.	.08	.08½	.08½	.08
24.00	23.00	24.00	23.00	Nitrate, 700 lb casks.....lb.	23.00	24.00	24.00	23.00
8.00	5.00	8.00	5.00	Barytes, Floated, 350 lb bbls	5.00	8.00	8.00	5.00
.37	.34	.38	.36	wks.....ton	.24	.31	.34	.24
.42	.39	.43	.41	Bauxite, bulk, mines.....ton	.37	.38	.38	.37
.53	.51	.58	.56	Beeswax, Yellow, crude bags.....lb.	.34	.36	.53	.34
.65	.60	.70	.65	Refined, cases.....lb.	.60	.65	.65	.60
.23	.23	.23	.21	White, cases.....lb.	.23	.24	.24	.22
.23	.23	.23	.21	Benzaldehyde, technical, 945 lb	.23	.24	.24	.22
.74	.70	.74	.70	drums wks.....lb.	.74	.74	.74	.65
1.00	1.00	1.00	1.00	Benzene	1.00	1.00	1.00	1.00
.25	.25	.25	.25	Benzene, 90%, Industrial, 8000	.25	.25	.25	.25
.26	.22	.26	.24	gal tanks wks.....gal.	.22	.24	.24	.22
1.35	1.35	1.35	1.35	Ind. Pure, tanks works.....gal.	1.35	1.35	1.35	1.35
.68	.60	.65	.63	Benzidine Base, dry, 250 lb	.68	.65	.65	.53
90.00	75.00	90.00	80.00	bbls.....lb.	90.00	90.00	90.00	75.00
2.25	2.00	2.25	2.25	Benzoyl, Chloride, 500 lb drs.....lb.	2.25	2.35	2.35	2.00
4.60	3.90	5.25	4.65	Benzyl, Chloride, tech drs.....lb.	4.60	3.25	3.90	3.25
5.00	4.40	5.35	4.75	Beta-Naphthol, 250 lb bbl wk.....lb.	5.00	3.75	4.50	3.75
4.70	4.25	5.05	4.50	Naphthylamine, sublimed, 200	4.70	3.50	4.10	3.50
.35	.32	.35	.31	lb bbls.....lb.	.35	.35	.35	.35
42.00	39.00	30.00	29.00	Blanc Fixe, 400 lb bbls wks.....ton	42.00	39.00	39.00	39.00
.07	.06	.07	.06	Bleaching Powder, 300 lb drs	.07	.07	.07	.06
.08½	.08½	.08½	.08½	c-1 wks contract.....100 lb.	.08½	.08½	.08½	.08½
35.00	30.00	37.00	31.00	Blood, Dried, fob, NY.....Unit	35.00	31.00	31.00	31.00
.03½	.02½	.05	.2½	Chicago.....Unit	.03½	.03½	.03½	.02½
.14	.10½	.12	.10½	S. American shipt.....Unit	.14	.14	.14	.12
.14	.10	.10	.08	Blues, Bronze Chinese Milori	.14	.14	.14	.12
28.00	26.00	28.00	26.00	Prussian Soluble.....lb.	28.00	28.00	28.00	26.00
1.20	.60	1.20	.60	Bone, raw, Chicago.....ton	1.20	.45	.47	.38
1.25	.55	1.25	.55	Bone, Ash, 100 lb kegs.....lb.	1.25	1.20	1.20	.60
.195	.184	1.60	1.40	Black, 200 lb bbls.....lb.	.195	.187	.20	.181
.186	.181	1.55	1.35	Meal, 3% & 50%, Imp.....ton	.186	.175	.186	.175
.70	.34	.70	.70	Borax, bags.....lb.	.70	.44	.44	.34
.....	.....	.....	.....	Bordeaux, Mixture, 16% pwd.....lb.	.....	.....	.....	.....
.50	.50	.....	.....	Paste, bbls.....lb.	.50	.50	.50	.50
.36	.25	.36	.34	Brazilwood, sticks, shpmt.....lb.	.36	.27	.27	.25
.60	.25	.60	.60	Bromine, cases.....lb.	.60	.30	.30	.25
.60	.57	.60	.57	Bronze, Aluminum, powd blk.....lb.	.60	.60	.60	.57
1.75	.75	2.00	1.35	Gold bulk.....lb.	1.75	1.40	1.75	.90
4.50	4.50	4.50	3.50	Butyl, Acetate, normal drs.....lb.	4.50	2.50	4.50	2.50
.09	.07	.09	.06	.....lb.	.09	.09	.09	.07
.06	.05	.06	.05	Tank, wks.....lb.	.06	.06	.06	.05
1.00	1.00	1.00	1.00	Aldehyde, 50 gal drs wks.....lb.	1.00	1.00	1.00	1.00
25.00	22.75	27.00	25.00	Carbitol & ee Diethylene Glycol	25.00	22.75	22.75	22.75
20.00	20.00	23.00	20.00	Mono (Butyl Ether).....	20.00	20.00	20.00	20.00
52.00	42.00	52.00	52.00	Cellosolve (see Ethylene glycol	52.00	43.00	43.00	42.00
1.25	1.25	.....	.....	mono butyl ether).....	1.25	1.25	1.25	1.25
.08	.07	.08	.07	Furoate, tech., 50 gal. dr., lb.	.08	.08½	.08½	.08
.26	.25	.....	.....	Propionate, drs.....lb.	.26	.26	.26	.25
88.15	82.15	.....	.....	Stearate, 50 gal drs.....lb.	88.65	88.65	88.65	88.65
.18	.18	.18	.18	Tartrate, drs.....lb.	.18	.18	.18	.18
.24	.22	.28	.22	Cadmium, Sulfide, boxes.....lb.	.16½	.17	.20	.16½
.....	.....	.....	.....	Calcium	.....	.....	.....	.....
.15	.08	.15	.08	Calcium, Acetate, 150 lb bags	.15	.15	.15	.08
.12	.12	.12	.12	c-1.....100 lb.	.12	.12	.12	.12
.06	.05½	.06	.05½	Arsenate, 100 lb bbls c-1	.06	.06	.06	.05
.06	.06	.06	.06	wks.....lb.	.06	.06	.06	.05
.07½	.06½	.07½	.07	Carbide, drs.....lb.	.07½	.07	.07	.06½
.43	.35	.58	.45	Carbonate, tech, 100 lb bags	.43	.34	.37	.30
.40	.33	.60	.40	c-1.....100 lb.	.40	.27	.33	.26
.32	.28	.38	.34	Chloride, Flake, 375 lb drs	.32	.25	.27	.23
.36	.31	.56	.38	c-1 wks.....ton	.36	.27	.30	.23
.25	.24	.32	.25	Solid, 650 lb drs c-1 fob wks	.25	.18	.23	.17
.26	.24	.32	.25	.....ton	.26	.17	.23	.17
.17	.15	.18½	.14½	Nitrate, 100 lb bags.....ton	.17	.15	.15	.13
.....	.....	.....	.....	Peroxide, 100 lb. drs.....lb.	.....	.....	.....	.....
.....	.....	.....	.....	Phosphate, tech, 450 lb bbls lb.	.....	.....	.....	.....
.....	.....	.....	.....	Stearate, 100 lb bbls.....lb.	.....	.....	.....	.....
.....	.....	.....	.....	Calurea, bags S. points. c.i.f. ton	.....	.....	.....	.....
.....	.....	.....	.....	Camwood, Bark, ground bbls.....lb.	.....	.....	.....	.....
.....	.....	.....	.....	Candelilla Wax, bags.....lb.	.....	.....	.....	.....
.....	.....	.....	.....	Carbitol, (See Diethylene Glycol	.....	.....	.....	.....
.....	.....	.....	.....	Mono Ethyl Ether).....	.....	.....	.....	.....
.....	.....	.....	.....	Carbon, Decolorizing, 40 lb bags	.....	.....	.....	.....
.....	.....	.....	.....	c-1.....100 lb.	.....	.....	.....	.....
.....	.....	.....	.....	Black, 100-300 lb cases 1c-1	.....	.....	.....	.....
.....	.....	.....	.....	NY.....lb.	.....	.....	.....	.....
.....	.....	.....	.....	Bisulfide, 500 lb drs 1c-1	.....	.....	.....	.....
.....	.....	.....	.....	NY.....lb.	.....	.....	.....	.....
.....	.....	.....	.....	Dioxide, Liq. 20-25 lb eyl.....lb.	.....	.....	.....	.....
.....	.....	.....	.....	Tetrachloride, 1400 lb drs	.....	.....	.....	.....
.....	.....	.....	.....	delivered.....lb.	.....	.....	.....	.....
.....	.....	.....	.....	Carnauba Wax, Flor, bags.....lb.	.....	.....	.....	.....
.....	.....	.....	.....	No. 1 Yellow, bags.....lb.	.....	.....	.....	.....
.....	No. 2 N Country, bags.....lb.
.....	No. 2 Regular, bags.....lb.
.....	No. 3 N. C.....lb.
.....	No. 3 Chalky.....lb.
.....	Casein, Standard, ground.....lb.

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**KESSLER CHEMICAL
CORPORATION
ORANGE, N. J.**

Purchasing Power of the Dollar: 1926 Average—\$1.00 - 1929 Average \$1.039 - Jan. 1929 \$1.026 - Sept. 1930 \$1.193

deliveries. Present prices are based on .175 in tanks and .181 @ 187 in drums.

Calcium Acetate — Department of Commerce figures report July production at 3,991,753 lbs. compared with 6,296,967 lbs. during the previous month and 10,658,348 lbs. in July 1929.* Despite this evident curtailment in production the highly competitive situation continues unabated and while no changes were publicly announced indications were not lacking that \$3.00 a cwt. was being shaded as much as 1/2 c on large tonnages in a determined effort on the part of producers to reduce present unwieldy inventories.

Calcium Arsenate — At this time of the year it is to be expected that withdrawals are but nominal. Principal interest of consuming trade centered in a possible upward tendency in prices for 1931 due to a firm position of Arsenic at the new levels.

Calcium Chloride — Producers report past season as one of the most satisfactory due to the extreme drought in most sections of the country. The usual seasonal slackening in shipments has taken place but withdrawals for coal treating are improving.

Carbon Black — Consumers were inactive during the month and with some slight accumulation of stocks rumors of small concessions in some quarters were heard.

Carbon Tetrachloride — No new developments occurred during the month. Producers report shipments are fairly large for this time of the year.

Casein — No broad change has been made as yet in the situation. Sales were again small and for immediate deliveries. Consumers are evidently waiting to note what effect recent upheaval in Argentina will have on the market.

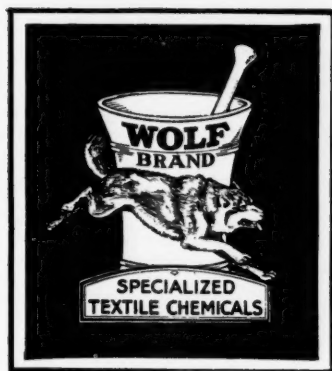
Cellulose Acetate — Producers announced near the close of the month a reduction of 5c bringing the new schedule price to \$1.05.

China Clay — The strong position of this commodity continues with plenty of inquiry for both the domestic and imported grades. Prices remain firm and unchanged.

Chlorine — Papermakers have come into the market to a better degree in the last few weeks. The competitive situation remains unaltered with buyers covering immediate requirements only and waiting future developments. No indication as yet has been made by producers as to 1931 contract prices.

Copper — The metal again registered a reduction closing at 10c a lb. a low figure for thirty-six years. At this price sales

1929		1928		Current Market	1930	
High	Low	High	Low		High	Low
Cellulosolve (see Ethylene glycol mono ethyl ether).....						
Acetate (see Ethylene glycol mono ethyl ether acetate).....						
.30	.20	.30	.26	Celluloid, Scraps, Ivory cs.....lb.	.20	.20
.20	.18	.20	.18	Shell, cases.....lb.	.20	.18
.32	.15	.32	.30	Transparent, cases.....lb.	.15	.15
1.25	1.20	1.40	1.40	Cellulose, Acetate, 50 lb kegs..lb.	1.05	1.25
.03	.03	.03	.03	Chalk, dropped, 175 lb bbls...lb.	.03	.03
.03	.02	.04	.04	Precip, heavy, 560 lb cks...lb.	.02	.03
.03	.02	.03	.02	Light, 250 lb casks.....lb.	.02	.03
.19	.18	.19	.18	Charcoal, Hardwood, lump, bulk wks.....bu.	.18	.19
.06	.06	.06	.06	Willow, powd, 100 lb bbl wks.....lb.	.06	.06
.05	.04	.05	.04	Wood, powd, 100 lb bbls...lb.	.04	.05
.02	.03	.03	.02	Chestnut, clarified bbls wks...lb.	.02	.03
.02	.01	.02	.01	25% tks wks.....lb.	.01	.02
.04 1/2	.04 1/2	.04 1/2	.04 1/2	Powd, 60%, 100 lb bgs wks..lb.	.04	.04
.06	.05	.06	.05	Powd, decolorized bgs wks..lb.	.06	.06
9.00	8.00	9.00	8.00	China Clay, lump, blk mines ton	8.00	9.00
.02	.01	.02	.01	Powdered, bbls.....lb.	.01	.02
12.00	10.00	12.00	10.00	Pulverized, bbls wks.....ton	10.00	12.00
25.00	15.00	25.00	15.00	Imported, lump, bulk.....ton	15.00	25.00
.03	.01	.03	.03	Powdered, bbls.....lb.	.01	.03
Chlorine						
.08	.07	.09	.08	Chlorine, cys 1c-1 wks contract	.07	.08
.04	.04	.....	.....	cys, cl wks, contract...lb.	.04	.04
.03	.025	.03	.03	Liq tank or multi-car lot cys wks contract.....lb.	.025	.025
.10	.08	.07	.07	Chlorobenzene, Mono, 100 lb drs 1c-1 wks.....lb.	.10	.10
.20	.16	.22	.20	Chloroform, tech, 1000 lb drs..lb.	.15	.16
1.35	1.00	1.35	1.00	Chloropierin, comml cys...lb.	1.00	1.35
.29	.26	.29	.26	Chrome, Green, CP.....lb.	.26	.29
.11	.06	.11	.06	Commercial.....lb.	.06	.11
.18	.15	.17	.15	Yellow.....lb.	.17	.18
.05	.04	.05	.04	Chromium, Acetate, 8% Chrome bbls.....lb.	.04	.05
.05	.05	.05	.05	20° soln, 400 lb bbls...lb.	.05	.05
.28	.27	.28	.27	Fluoride, powd, 400 lb bbl..lb.	.27	.28
.35	.34	.35	.34	Oxide, green, bbls.....lb.	.34	.35
10.50	10.00	9.50	9.00	Coal tar, bbls.....bbl	10.00	10.50
2.22	2.10	2.22	2.10	Cobalt Oxide, black, bags...lb.	2.10	2.22
1.01	.95	.87	.84	Cochineal, gray or black bag..lb.	.95	1.01
.95	.95	.86	.86	Teneriffe silver, bags.....lb.	.95	.95
Copper						
24.00	17.00	17.00	12.90	Copper, metal, electrol...100 lb.	10.00	17.78
.25	.13	.17	.16	Carbonate, 400 lb bbls...lb.	.08	.18
.28	.25	.28	.28	Chloride, 250 lb bbls...lb.	.25	.28
.60	.44	.50	.48	Cyanide, 100 lb drs.....lb.	.41	.42
.32	.16	.17	.16	Oxide, red, 100 lb bbls...lb.	.24	.32
.19	.18	.19	.18	Sub-acetate verdigris, 400 lb bbls.....lb.	.18	.19
7.00	5.50	5.50	5.05	Sulfate, bbls c-1 wks...100 lb.	4.10	5.50
14.00	13.00	14.00	13.00	Copperas, cys and sugar bulk c-1 wks.....ton	13.00	14.00
.42	.40	.42	.40	Cotton, Soluble, wet, 100 lb bbls.....lb.	.40	.42
.....	.....	.....	.....	Cottonseed, S. E. bulk c-1...ton	.....	.....
.....	.....	.....	.....	Meal S. E. bulk.....ton	.....	.....
38.00	37.50	38.00	36.00	7% Amm., bags mills...ton	37.50	38.00
.28	.26	.27	.26	Cream Tartar, USP, 300 lb bbls.....lb.	.25	.27
.42	.40	.42	.40	Cresote, USP, 42 lb cys...lb.	.40	.42
.19	.15	.19	.17	Oil, Grade 1 tanks.....gal.	.15	.16
.23	.13	.23	.21	Grade 2.....gal.	.13	.14
.28	.13	.28	.25	Grade 3.....gal.	.13	.14
.17	.14	.20	.17	Cresol, USP, drums.....lb.	.14	.17
.36	.32	.....	.....	Crotonaldehyde, 50 gal drs...lb.	.32	.36
.17	.16	.17	.16	Cudbear, English.....lb.	.16	.17
.16	.12	.18	.18	Cutch, Rangoon, 100 lb bales..lb.	.12	.13
.08	.08	.07	.06	Borneo, Solid, 100 lb bale..lb.	.08	.08
2.00	2.00	1.75	1.67	Cyanamide, bulk c-1 wks	.....	1.45
4.92	4.62	5.12	3.77	Nitrogen unit.....	4.72	4.82
4.87	4.57	5.07	3.72	Dextrin, corn, 140 lb bags. 100 lb.	4.42	4.72
.09	.08	.09	.08	White, 140 lb bags...100 lb.	4.37	4.67
.09	.08	.09	.08	Potato, Yellow, 220 lb bgs..lb.	.08	.09
.08	.08	.08	.08	White, 220 lb bags 1c-1...lb.	.08	.09
3.80	3.80	3.80	3.80	Tapioca, 200 lb bags 1c-1...lb.	.08	.08
3.10	2.70	2.90	2.85	Diamylphthalate, drs wks...gal.	3.80	3.80
.26	.26	.28	.26	Dianisidine, barrels.....lb.	2.70	2.70
.31	.29	.31	.29	Dibutylphthalate, wks.....lb.	.25	.28
.13	.05	.....	.....	Dibutyltartrate, 50 gal drs...lb.	.29	.31
.65	.55	.65	.55	Dichloroethylene, 50 gal drs lb.	.06	.07
3.00	2.75	.25	.23	Dichloromethane, drs wks...lb.	.55	.65
1.90	1.85	2.15	2.15	Diethylamine, 400 lb drs...lb.	2.75	3.00
.60	.55	2.00	1.85	Diethylcarbonate, drs.....gal.	1.85	1.90
.13	.10	.60	.55	Diethylaniline, 850 lb drs...lb.	.55	.60
.15	.13	.15	.10	Diethyleneglycol, drs.....lb.	.14	.16
.30	.25	.35	.25	Mono ethyl ether, drs...lb.	.16	.16
.50	.50	.....	.....	Mono butyl ether, drs...lb.	.28	.30
.67	.64	.67	.64	Diethylene oxide, 50 gal drs..lb.	.50	.50
.26	.24	.26	.24	Diethylorthotoluidin, drs...lb.	.64	.67
.35	.30	.35	.30	Diethyl phthalate, 1000 lb drums.....lb.	.24	.26
2.62	2.62	2.62	2.62	Diethylsulfate, technical, 50 gal drums.....lb.	.30	.35
.32	.26	.32	.30	Dimethylamine, 400 lb drs...lb.	2.62	2.62
Dimethylaniline, 340 lb drs...lb.						
					.28	.28



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Purchasing Power of the Dollar: 1926 Average—\$1.00 - 1929 Average \$1.039 - Jan. 1929 \$1.026 - Sept. 1930 \$1.193

were heavy and some producers were refusing tonnage. In some quarters further reductions are expected such belief being based on the fact that over five months supply of copper are now above ground. It is problematical how long producers will continue to operate at this figure however and it is likely that if one or two of the large producers were to announce suspension of operations that a moderate price increase would be the immediate result.

Copper Carbonate — Both the agricultural and industrial grades were moving in very restricted quantities.

Copper Cyanide — After resisting any reduction in price for several months the cyanide reacted to 41c in large quantities a drop of 3c. The schedule as announced in 41c for 100 lb. drums, 43c for 50 lb. drums, 44c in 25 lb. lots and 45c for 10 lb. containers. Some slight improvement in demand from job platers was reported but automobile and accessory houses are still slow.

Copper Sulfate — In sympathy with the drop in the copper market producers of blue vitriol announced on September 30 a further reduction of 15c a cwt., bringing the price to \$4.10 in carlots. Final tonnages for the first eight months of 1930 compare very favorably with 1928 but are below 1929. Stocks of copper sulfate are low and the downward revision simply represents the weak condition in the metal market. Producers are beginning to manufacture again in larger quantity. The industrial demand is only fair at the moment.

Copperas — Curtailment in the iron and steel industry has prevented any increase in stocks and prices are based on \$11 a ton. The silk dyeing industry is taking sizable quantities and so is the ink industry.

Copra — Little improvement in trade has been discovered. Prices are still extremely low at 3¼c to 3.3c c. i. f. Pacific Coast.

Cream of Tartar — Prices are firm at the levels established in August. Demand is only fair.

Cyanamid — During the month the price was revised to \$1.45 per unit of ammonia at coast points in bulk.

Dextrins — Producers announced at the end of the month a reduction of 15c on all grades white dextrin now being quoted at \$4.37; gum, \$4.67 and canary, \$4.62. This reduction offsets a similar increase made on August 4. Shipments and spot demand are only routine.

Diethylene Glycol — Sales are of a routine nature. Drums at 14 @ 16c depending upon quantity.

1929		1928			Current Market	1930		
High	Low	High	Low			High	Low	
.50	.45	.50	.45	Dimethylsulfate, 100 lb drs. . . lb.	.45	.50	.50	.45
.16½	.15	.16½	.15½	Dinitrobenzene, 400 lb bbls. . . lb.	.15½	.16½	.16½	.15½
.15	.1	.16	.15	Dinitrochlorobenzene, 400 lb bbls. . . lb.	.13	.15	.15	.13
.37	.34	.34	.32	Dinitronaphthalene, 350 lb bbls. . . lb.	.34	.37	.37	.34
.32	.31	.32	.31	Dinitrophenol, 350 lb bbls. . . lb.	.31	.32	.32	.31
.19	.17	.19	.18	Dinitrotoluene, 300 lb bbls. . . lb.	.16	.17	.18	.16
.49	.42	.90	.48	Diorthotolylguanidine, 275 lb bbls wks. . . lb.	.42	.46	.46	.42
.50	.40			Dioxan (See Diethylene Oxide) . . . lb.	.20	.40	.50	.20
.47	.40	.47	.45	Diphenylamine . . . lb.	.40	.40	.40	.40
.40	.39	.72	.40	Diphenylguanidine, 100 lb bbl lb.	.30	.35	.35	.30
.30	.26	.30	.26	Dip Oil, 25%, drum . . . lb.	.26	.30	.30	.26
57.00	46.50	62.00	58.00	Divi Divi pods, bgs shipmt. . ton	35.00	46.50	46.50	35.00
.05½	.05	.05½	.05	Extract . . . lb.	.05	.05½	.05½	.05
.84	.77	.82	.73	Egg Yolk, 200 lb cases . . . lb.	.72	.75	.80	.72
1.90	1.70	1.75	1.7	Epsom Salt, tech, 300 lb bbls c-1 NY . . . 100 lb.	1.70	1.90	1.90	1.70
.39	.38	.38	.37	Ether, USP, 600 lb drs. . . lb.	.13	.14	.14	.13
				Anhydrous, C.P. 300 lb drs. lb.	.40	.40	.40	.40
.122	.108	1.05	.75	Ethyl Acetate, 85% Ester, . . . tanks. . . lb.	.09	.115	.09	.09
.129	.111	1.25	1.10	drums . . . lb.	.096	.102	.158	.096
.68	.65			Anhydrous, tanks . . . lb.	.142	.142	.142	.142
1.11	1.05	1.11	1.05	drums . . . lb.	.149	.156	.156	.149
.55	.50	.70	.70	Acetoacetate, 50 gal drs. . . lb.	.65	.68	.68	.65
1.90	1.85			Benzylaniline, 300 lb drs. . . lb.	1.05	1.11	1.11	1.05
.22	.22	.22	.22	Bromide, tech, drums . . . lb.	.50	.55	.55	.50
.40	.35			Carbonate, 90%, 50 gal drs gal.	1.85	1.90	1.90	1.85
.52	.50			Chloride, 200 lb. drums . . . lb.	.22	.22	.22	.22
5.00	5.00			Chlorocarbonate, ebys. . . lb.	.30	.40	.30	.30
.35	.25	3.50	3.50	Ether, Absolute, 50 gal drs. lb.	.50	.52	.52	.50
.30	.30	.30	.30	Furoate, 1 lb tins . . . lb.	5.00	5.00	5.00	5.00
.55	.45	.55	.45	Lactate, drums works . . . lb.	.25	.29	.29	.25
.36	.30	.36	.30	Methyl Ketone, 50 gal drs. lb.	.30	.30	.30	.30
.70	.79	.70	.70	Oxalate, drums works . . . lb.	.45	.55	.55	.45
.85	.75	.85	.75	Oxybutyrate, 50 gal drs wks. lb.	.30½	.30½	.30½	.30½
.10	.05	.11	.07	Ethylene Dibromide, 60 lb dr. lb.	.70	.70	.70	.70
.30	.25	.40	.25	Chlorhydrin, 40%, 10 gal ebys. chloro. cont. . . . lb.	.75	.85	.85	.75
.31	.23	.27	.31	Dichloride, 50 gal drums . . . lb.	.05	.07	.07	.05
.24	.16	.20	.24	Glycol, 50 gal drs wks. . . lb.	.25	.28	.28	.25
.26	.19	.23	.26	Mono Butyl Ether drs wks. . . lb.	.25	.27	.27	.23
.23	.19			Mono Ethyl Ether drs wks. . . lb.	.17	.20	.20	.16
.65	.45	.65	.62	Mono Ethyl Ether Acetate dr. wks. . . lb.	.19½	.23	.23	.19
25.00	20.00	25.00	20.00	Mono Methyl Ether, drs. lb. Oxide, cyl. . . . lb.	.21	.23	.23	.19
21.00	15.00	21.00	15.00	Ethylidenaniline . . . lb.	2.00	2.00	2.00	2.00
.09	.05	.09	.07½	Feldspar, bulk . . . ton	.45	.47½	.47½	.45
4.25&10	3.65&10	5.50&10	4.90&10	Powdered, bulk works . . . ton	25.00	20.00	25.00	20.00
4.00&50	3.50&50	4.75&50	4.00&50	Ferric Chloride, tech, crystal 475 lb bbls. . . lb.	15.00	21.00	21.00	15.00
46.00	41.00	25.00	25.00	Fish Scrap, dried, wks. . . unit	.05	.07½	.07½	.05
				Acid, Bulk 7 & 3½% delivered Norfolk & Balt. basis . . unit	3.90&10	4.35&10	3.90&10	
				Fluorspar, 98%, bags . . . lb.	3.25&50	3.50&50	3.25&50	
					41.00	46.00	46.00	41.00
Formaldehyde								
.42	.37½	.42	.39	Formaldehyde, aniline, 100 lb. drums . . . lb.	.37½	.42	.42	.37½
.10	.08½	.09	.08½	USP, 400 lb bbls wks. . . lb.	.07½	.07½	.08	.07½
.04	.02½	.04	.02½	Fossil Flour . . . lb.	.02½	.04	.04	.02½
20.00	15.00	20.00	15.00	Fullers Earth, bulk, mines . . ton	15.00	20.00	20.00	15.00
30.00	25.00	30.00	25.00	Imp. powd 2-1 bags . . . ton	25.00	30.00	30.00	25.00
.19½	.17	.19½	.1½	Furfural (tech.) drums, wks. lb.	.10	.15	.10	.10
.30	.30			Furfural (tech.) 100 lb dr. . lb.	.30	.30	.30	.30
5.00	5.00			Furfuryl Acetate, 1 lb tins . . lb.	5.00	5.00	5.00	5.00
.50	.50			Alcohol, (tech.) 100 lb dr. . lb.	.50	.50	.50	.50
1.00	.50			Furoic Acid (tech.) 160 lb dr. . lb.	.50	.50	.50	.50
1.35	1.35	1.35	1.3	Fusel Oil, 10% impurities . . gal.	1.35	1.35	1.35	1.35
.05	.04	.05	.04	Fustic, chips . . . lb.	.04	.05	.05	.04
.22	.20	.22	.20	Crystals, 100 lb boxes . . . lb.	.20	.22	.22	.20
.10	.09	.10	.09	Liquid, 50°, 600 lb bbls . . . lb.	.09	.10	.10	.09
.16	.14	.23	.20	Solid, 50 lb boxes . . . lb.	.14	.16	.16	.14
26.00	25.00	32.00	30.00	Sticks . . . ton	25.00	26.00	26.00	25.00
.52	.45	.52	.50	G Salt paste, 360 lb bbls . . lb.	.45	.50	.50	.45
.21	.18	.21	.20	Gall Extract . . . lb.	.18	.20	.20	.18
.07	.06	.09	.08	Gambier, common 200 lb ca. . lb.	.06	.07	.07	.06
.14	.08	.14	.12	25% liquid, 450 lb bbls . . lb.	.08	.10	.10	.08
.09	.08½	.12	.11	Singapore cubes, 150 lb bg. . lb.	.08½	.09	.09	.08½
.50	.45	.50	.45	Gelatin, tech, 100 lb cases . . lb.	.45	.50	.50	.45
1.70	.70	1.00	.70	Glauber's Salt, tech, c-1 wks. . . 100 lb.	1.00	1.70	1.70	1.00
3.34	3.20	3.34	3.24	Glucose (grape sugar) dry 70-80° bags c-1 NY . . . 100 lb.	3.24	3.34	3.34	3.24
3.14	3.14	3.14	3.14	Tanner's Special, 100 lb bags . . . lb.		3.14	3.14	3.14
.24	.20	.24	.20	Glue, medium white, bbls . . lb.	.20	.24	.24	.20
.26	.22	.26	.22	Pure white, bbls . . . lb.	.22	.26	.26	.22
.16	.13½	.19	.15	Glycerin, CP, 550 lb drs. . . lb.	.14	.14½	.14½	.14
.12½	.10½	.15	.11½	Dynamite, 100 lb drs . . . lb.	.12	.12½	.12½	.12
.08½	.07½	.10½	.08½	Saponification, tanks . . . lb.	.07½	.08	.08	.07½
.07½	.06½	.09½	.07½	Soap Lye, tanks . . . lb.	.07	.07½	.07½	.07
35.00	15.00	35.00	15.00	Graphite, crude, 220 lb bgs. . ton	15.00	35.00	35.00	15.00
.09	.06	.09	.06	Flake, 500 lb bbls . . . lb.	.06	.09	.09	.06
Gums								
.04½	.03	.04½	.03½	Gum Accroides, Red, coarse and fine 140-150 lb bags . . . lb.	.03½	.04½	.04½	.03½
.06½	.06½	.06½	.06	Powd, 150 lb bags . . . lb.	.06	.06½	.06½	.06

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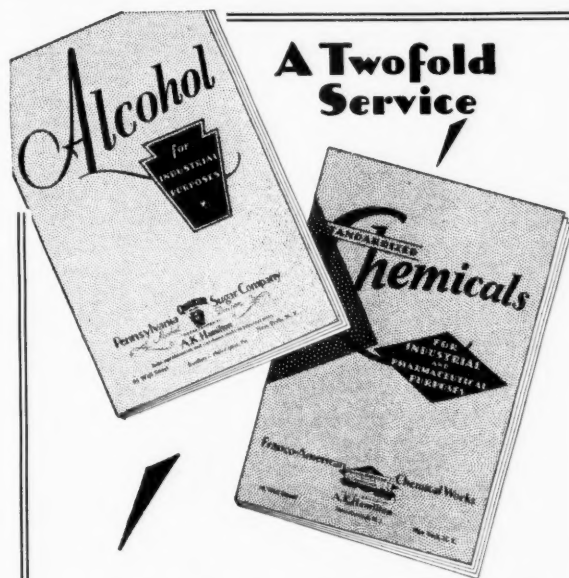
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Purchasing Power of the Dollar: 1926 Average—\$1.00 - 1929 Average \$1.039 - Jan. 1929 \$1.026 - Sept. 1930 \$1.193

Egg Yolk — With several shipments from abroad unsatisfactory dealers had little difficulty in advancing the market 1c bringing current levels to 60 @ 63c. Spot stocks are said to be very low and further increases in the price structure is expected in some quarters.

Epsom Salt — No new developments were in evidence during the month. Shipments were in good volume and prices steady.

Ether — U. S. P. Grade was reduced to 13c a lb. on September 27. This new schedule applies to both 600 and 300 lb. drums and represents a reduction of one cent from former price levels.

Ethyl Acetate — No further downward revision of prices were made, producers reporting that prices had stabilized at the new figures announced at the end of August. Carlots are quoted at 9.6c in drums and 9c for tanks. These are spot prices only and producers have not indicated their position with respect to contracts for next year. Actual tonnage is small, buyers preferring to cover only their immediate requirements.

Fish Scrap — This market was slightly weaker with only routine sales in the face of more liberal offerings.

Fluorspar — Increasing interest from the ceramics industry featured this market. Tonnages shipped during September were much larger than any previous month this year.

Formaldehyde — The competitive situation has eased due to an improved demand for export. Some improvement is also noted in shipments although the plastic industry has not as yet shown any betterment.

Glaubers Salt — No price change in the domestic product was made during the month but foreign material could be had as low as 70c a cwt. Dyers are still operating on a fair production basis and the salt was in good demand.

Glues — Previous price levels are still holding in the face of poor demand from buying interests. Efforts to obtain price concessions on sizable orders were unsuccessful.

Glycerine — An improved tone is in evidence and producers report fairly large tonnages are being moved at quoted prices. Inquiries from the anti-freeze trade is likewise encouraging and a large volume is expected to be consumed in this channel. Present prices are given at 7½c for soaply crude, 80% basis; dynamite, carlots 12c; chemically pure 12½c.

Gums — The price range of most of the important gums was steady with a slightly improved demand. Additional

1929		1928			Current Market		1930	
High	Low	High	Low		High	Low	High	Low
.20	.18	.20	.18	Yellow, 150-200 lb bags... lb.	.18	.20	.20	.18
.40	.35	.40	.35	Anini (Zanzibar) bean & pea 250 lb cases... lb.	.35	.40	.40	.35
.55	.50	.55	.50	Glassy, 250 lb cases... lb.	.50	.55	.55	.50
.12	.09	.12	.09	Asphaltum, Barbadoes (Manjak) 200 lb bags... lb.	.09	.12	.12	.09
.17	.15	.17	.15	Egyptian, 200 lb cases... lb.	.15	.17	.17	.15
65.00	58.00	65.00	55.00	Gilsonite Selects, 200 lb bags... ton	58.00	65.00	65.00	58.00
.26	.22	.26	.22	Damar Batavia standard 136, lb cases... lb.	.15	.15	.20	.14
.11	.10	.11	.10	Batavia Dust, 160 lb bags... lb.	.06	.07	.11	.06
.17	.15	.17	.16	E Seeds, 136 lb cases... lb.	.08	.09	.13	.08
.13	.13	.14	.13	F Splinters, 136 lb cases and bags... lb.	.07	.08	.13	.07
.30	.26	.30	.29	Singapore, No 1, 224 lb cases lb.	.19	.19	.24	.18
.24	.21	.24	.20	No. 2, 224 lb cases... lb.	.13	.14	.20	.13
.14	.10	.15	.13	No. 3, 180 lb bags... lb.	.07	.08	.11	.07
.40	.38	.48	.33	Benzoil Sumatra, U. S. P. 120 lb cases... lb.	.33	.34	.40	.33
.17	.14	.15	.14	Copal Congo, 112 lb bags, clean opaque... lb.	.16	.17	.17	.16
.09	.08	.09	.08	Dark, amber... lb.	.07	.08	.08	.07
.14	.12	.14	.12	Light, amber... lb.	.12	.14	.14	.12
.36	.35	.36	.35	Water white... lb.	.37	.45	.45	.37
.65	.58	.65	.58	Mastic... lb.	.57	.58	.65	.57
.17	.17	.17	.16	Manila, 180-190 lb baskets Loba A... lb.	.13	.15	.17	.13
.16	.15	.16	.15	Loba B... lb.	.13	.14	.16	.13
.14	.13	.14	.13	Loba C... lb.	.10	.14	.14	.10
.19	.17	.19	.16	Pale bold, 224 lb cs... lb.	.16	.18	.19	.16
.13	.13	.13	.12	Pale nubs... lb.	.12	.12	.13	.12
.11	.10	.11	.07	East Indies chips, 180 lb bags lb.	.09	.10	.11	.09
.21	.20	.21	.17	Pale bold, 180 lb bags... lb.	.17	.18	.21	.17
.16	.15	.16	.14	Pale nubs... lb.	.12	.14	.16	.12
.23	.20	.25	.22	Pontianak, 224 lb cases... lb.	.19	.20	.21	.19
.15	.14	.15	.13	Pale bold gen No 1... lb.	.13	.14	.15	.13
.14	.13	.14	.13	Pale gen chips spot... lb.	.12	.13	.14	.12
.13	.13	.13	.13	Elemi, No. 1, 80-85 lb cs... lb.	.12	.12	.13	.12
.13	.12	.13	.12	No. 2, 80-85 lb cases... lb.	.11	.12	.13	.11
.57	.50	.57	.50	No. 3, 80-85 lb cases... lb.	.48	.54	.57	.48
.38	.35	.38	.35	Kauri, 224-226 lb cases No. 1 No. 2 fair pale... lb.	.32	.33	.38	.32
.12	.10	.12	.10	Brown Chips, 224-226 lb cases... lb.	.10	.12	.12	.10
.40	.38	.40	.38	Bush Chips, 224-226 lb cases... lb.	.38	.40	.40	.38
.26	.24	.26	.24	Pale Chips, 224-226 lb cases... lb.	.24	.26	.26	.24
.72	.35	.60	.26	Sandarac, prime quality, 200 lb bags & 300 lb casks... lb.	.32	.33	.40	.32
.20	.17	.15	.13	Helium, 1 lit. bot... lit.	25.00	25.00	25.00	25.00
.20	.14	.20	.17	Hematine crystals, 400 lb bbls lb.	.14	.18	.18	.14
.11	.11	.11	.11	Paste, 500 bbls... lb.	.11	.11	.11	.11
.03	.03	.03	.03	Hemlock 25%, 600 lb bbls wks lb.	.03	.03	.03	.03
17.00	16.00	16.00	16.00	Bark... ton	18.00	16.00	16.00	16.00
.60	.60	.60	.60	Hexalene, 50 gal drs wks... lb.	.60	.60	.60	.60
.58	.48	.56	.62	Hexamethylenetetramine, drs lb.	.48	.50	.50	.48
4.00	3.75	4.00	4.00	Hoof Meal, fob Chicago... unit	3.75	3.75	3.75	3.75
3.90	3.75	3.75	3.75	South Amer. to arrive... unit	3.75	3.75	3.75	3.75
.26	.24	.26	.24	Hydrogen Peroxide, 100 vol, 140 lb cbs... lb.	.24	.26	.26	.24
.15	.12	.15	.12	Hydroxamine Hydrochloride lb.	3.15	3.15	3.15	3.15
1.30	1.28	1.30	1.28	Hypernic, 51*, 600 lb bbls... lb.	.12	.15	.15	.12
.18	.15	.18	.15	Indigo Madras, bbls... lb.	1.28	1.30	1.30	1.28
.12	.12	.12	.12	20% paste, drums... lb.	.15	.18	.18	.15
				Synthetic, liquid... lb.	.12	.12	.12	.12
.10	.09	.10	.09	Iron Chloride, see Ferric or Ferrous Iron Nitrate, kegs... lb.	.09	.10	.10	.09
3.25	2.50	3.25	2.50	Coml, bbls... 100 lb.	2.50	3.25	3.25	2.50
.12	.10	.12	.10	Oxide, English... lb.	.10	.12	.12	.10
.03	.02	.03	.02	Red, Spanish... lb.	.02	.03	.03	.02
.90	.85	.90	.85	Isopropyl Acetate, 50 gal drs gal.	.85	.90	.90	.85
.18	.16	.20	.17	Japan Wax, 224 lb cases... lb.	.13	.13	.15	.13
70.00	60.00	70.00	60.00	Kieselguhr, 95 lb bgs NY... ton	60.00	70.00	70.00	60.00
13.50	13.00	13.00	13.00	Lead Acetate, bbls wks... 100 lb.	12.50	13.50	13.50	12.50
14.50	14.00	13.50	13.00	White crystals, 500 lb bbls wks... 100 lb.	12.00	13.00	14.50	12.00
.15	.13	.15	.13	Arsenate, drs 1c-1 wks... lb.	.13	.16	.16	.13
7.75	6.10	6.25	6.25	Dithiofuroate, 100 lb dr... lb.	1.00	1.00	1.00	1.00
.14	.14	.14	.14	Metal, c-1 NY... 100 lb.	7.75	7.75	6.10	7.75
.18	.17	.18	.17	Nitrate, 500 lb bbls wks... lb.	.14	.14	.14	.14
.08	.08	.08	.08	Oleate, bbls... lb.	.17	.18	.18	.17
.09	.09	.09	.09	Oxide Litharge, 500 lb bbls lb.	.08	.08	.08	.08
.09	.09	.09	.09	Red, 500 lb bbls wks... lb.	.09	.09	.09	.09
.08	.08	.08	.08	White, 500 lb bbls wks... lb.	.09	.09	.09	.09
57.00	52.00	52.00	48.00	Sulfate, 500 lb bbls wks... lb.	.08	.08	.08	.08
57.30	52.30	52.30	48.30	Leuna saltpetre, bags c.i.f. ton	57.60	57.60	57.60	57.60
4.50	4.50	4.50	4.50	S. points c.i.f. ton	57.90	57.90	57.90	57.90
1.05	1.05	1.05	1.05	Lime, ground stone bags... ton	4.50	4.50	4.50	4.50
.17	.15	.17	.15	Live, 325 lb bbls wks... 100 lb.	1.05	1.05	1.05	1.05
.06	.05	.06	.06	Lime Salts, see Calcium Salts Lime-Sulfur soln bbls... gal.	.15	.17	.17	.15
.08	.08	.08	.08	Lithopone, 400 lb bbls 1c-1 wks... lb.	.05	.05	.05	.05
.03	.03	.03	.03	Logwood, 51*, 600 lb bbls... lb.	.08	.08	.08	.08
.12	.12	.12	.12	Chips, 150 lb bags... lb.	.03	.03	.03	.03
26.00	24.00	27.00	26.00	Solid, 50 lb boxes... lb.	.12	.12	.12	.12
.08	.07	.08	.07	Sticks... ton	24.00	26.00	26.00	24.00
.25	.22	.30	.30	Lower grades... lb.	.07	.08	.08	.07
60.00	50.00	50.00	48.00	Madder, Dutch... lb.	.22	.25	.25	.22
				Magnesite, calc, 500 lb bbl... ton	50.00	60.00	60.00	50.00

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Purchasing Power of the Dollar: 1926 Average—\$1.00 - 1929 Average \$1.039 - Jan. 1929 \$1.026 - Sept. 1930 \$1.193

strength was noticeable in the grades of Damar, Batavia being marked up $\frac{1}{2}$ c in most cases. Stocks both in the hands of dealers and consumers are considerably below normal and further advance on any slight improvement in business is very probable. In one or two quarters reports from primary sources are to the effect that stocks are very low abroad.

Lead — Prices on pig lead closed firm at the end of the month with the New York market quoting $5\frac{1}{2}$ c and the East St. Louis market at 5.35c. Shipments were fairly large and well distributed into the various consuming industries.

Lithopone — Prices remain unchanged at former levels while producers report a better demand in most quarters.

Logwood — Some improvement is noticeable in the demand from consuming trades but current stocks are excessive and the price unsettled.

Mercury — Some shading was in evidence during the month and some business is reported to have been placed at \$113 a flask. Demand is extremely light.

Methanol — July production according to Department of Commerce amounted to 230,162 gallons as compared with 410,363 gallons in June and 633,731 gallons in July 1929. Total production of crude for first seven months of 1930 aggregated 3,759,959 gallons, against 4,911,405 gallons in 1929. Shipments of refined totalled 3,135,000 compared with 3,347,312 gallons in the corresponding period in 1929. Considerable interest is being aroused in the use of methanol as an anti-freeze and the report of the government on its possible toxicity is eagerly awaited. Prices remain unchanged.

Naphthalene — No change in spot prices is reported but producers have reduced carlot contract prices for next year's delivery. Some quarters indicate $3\frac{3}{4}$ c a lb. for flakes and $4\frac{3}{4}$ c for balls, f. o. b. works carlots can be done.

Naphtha — The undertone of the market appears to be firm with shipments light. Water white is quoted at 28-29c a gal. in tanks and 33-34c a gal. in drums carlots; f. o. b. producing points.

Nickel Salts — With the plating industry still operating on reduced schedules demand was only fair but at firm prices. Producers are maintaining the $\frac{1}{2}$ c differential between spot and contract prices.

Niter Cake — Published prices remain unaltered but some slight reduction is being looked for because of the lowering of salt cake prices. Shipments under contract are being taken with fairly good regularity.

Osage Orange — The textile and tanning industries are now buying in larger

1929		1928		Current Market	1930	
High	Low	High	Low		High	Low
Magnesium						
.06½	.06	.06½	.06			
36.00	36.00	37.00	27.00			
33.00	33.00	33.00	33.00			
31.00	31.00	31.00	31.00			
.10½	.10	.10½	.10			
.42	.42	.42	.42			
.50	.50	.50	.50			
1.25	1.00					
.10½	.09½	.10½	.09½			
.26	.25	.25	.23			
.24	.19	.24	.24			
.08½	.08	.08½	.08			
.06	.04½					
.03½	.02½	.03½	.03			
.04½	.03½	.04½	.04			
.05½	.04	.05½	.05			
.08½	.07	.07½	.07			
Nom.	.03½	Nom.	.03½			
35.00	30.00	45.00	39.00			
15.00	14.00	12.00	10.00			
2.05	2.05					
126.00	120.00	132.00	121.00			
.74	.67	.74	.72			
1.55	1.50	1.80	1.50			
.90	.80	.94	.90			
.72	.67	.74	.72			
Methanol						
.65	.51	.58	.46			
.65	.53	.60	.47			
.68	.53	.63	.44			
.66	.54	.58	.48			
.95	.95	.95	.95			
.85	.73	.90	.68			
.95	.85	.95	.85			
.60	.45	.60	.55			
.50	.50					
80.00	65.00	80.00	65.00			
115.00	110.00	115.00	110.00			
3.00	3.00					
.75	.70	.75	.70			
4.20	3.75	4.20	3.95			
.07	.06½	.07	.06½			
.04½	.03½	.04½	.04			
.08½	.05	.08½	.08			
43.00	40.00	50.00	42.00			
40.00	26.50	40.00	32.50			
34.00	27.50	40.00	32.50			
.18	.16	.18	.18			
.05½	.05½	.06	.05½			
.04½	.04½	.04½	.04½			
.05	.05	.05	.05			
.24	.20	.24	.21			
.40	.37	.38	.35			
.13	.13	.09½	.09			
.13	.13	.09	.08½			
1.30	1.25	1.30	1.25			
1.20	.98½	1.20	.98½			
18.00	12.00	14.00	13.00			
.10½	.09	.10½	.10½			
.36	.25	Nom.	.40			
4.00	3.40	4.00	3.35			
.25	.25	.25	.25			
.15	.14	.15	.14			
.16½	.16	Nom.	.25			
.13	.12	.18	.17			
50.00	30.00	50.00	45.00			
23.00	20.00	23.00	20.00			
.13½	.11½	.13½	.13			
2.25	2.15	2.25	2.20			
2.60	2.50	2.50	2.35			
.65	.60	.65	.60			
.28	.18	.28	.18			
.10	.07	.07	.06			
.33	.30	.35	.32			
.18	.16	.18	.17			
.90	.85	.90	.85			
.30	.25	.31	.29			
Magnesium Carb, tech, 70 lb bags NY.....lb.						
Chloride flake, 375 lb. drs c-1 wks.....ton						
Imported shipment.....ton						
Fused, imp, 900 lb bbls NY ton						
Fluosilicate, crys, 400 lb bbls wks.....lb						
Oxide, USP, light, 100 lb bbls lb						
Heavy, 250 lb bbls.....lb						
Peroxide, 100 lb cs.....lb						
Silicofluoride, bbls.....lb						
Stearate, bbls.....lb						
Manganese Borate, 30%, 200 lb bbls.....lb						
Chloride, 600 lb casks.....lb						
Dioxide, tech (peroxide) drs lb.						
Ore, powdered or granular 75-80%, bbls.....lb.						
80-85%, bbls.....lb.						
85-88%, bbls.....lb.						
Sulfate, 550 lb drs NY.....lb.						
Mangrove 55%, 400 lb bbls.....lb.						
Bark, African.....ton						
Marble Flour, bulk.....ton						
Mercurous chloride.....lb.						
Mercury metal.....75 lb flask						
Meta-nitro-aniline.....lb.						
Meta-nitro-para-toluidine 200 lb. bbls.....lb.						
Meta-phenylene-diamine 300 lb. bbls.....lb.						
Meta-toluene-diamine, 300 lb bbls.....lb.						
Methanol, (Wood Alcohol),... 95%.....gal.						
97%.....gal.						
Pure, Synthetic drums cars gal.						
Synthetic tanks.....gal.						
Methanol antifreeze 76½% tanks.....						
Methyl Acetate, drums.....gal.						
Acetone.....gal.						
Antraquinone.....lb.						
Cellosolve, (See Ethylene Glycol Monoc Methyl Ether) Chloride, 90 lb cyl.....lb.						
Furoate, tech., 50 gal. dr., lb.						
Mica, dry grd. bags wks.....lb.						
Wet, ground, bags wks.....lb.						
Michler's Ketone, kegs.....lb.						
Monochlorobenzene, drums see, Chorobenzene, mono.....lb.						
Monochlorotoluidine, drs. lb.						
Monomethylparaminosulfate 100 lb drums.....lb.						
Montan Wax, crude, bags.....lb.						
Myrobalans 25%, liq bbls.....b						
50% Solid, 50 lb boxes.....lb.						
J1 bags.....ton						
J2 bags.....ton						
R2 bags.....ton						
Naphtha, v. m. & p. (deodorized) bbls.....gal.						
Naphthalene balls, 250 lb bbls wks.....lb.						
Crushed, chipped bgs wks.....lb.						
Flakes, 175 lb bbls wks.....lb.						
Nickel Chloride, bbls kegs.....lb.						
Oxide, 100 lb kegs NY.....lb.						
Salt bbl. 400 bbls lb NY.....lb.						
Single, 400 lb bbls NY.....lb.						
Nicotine, free 40%, 8 lb tins, cases.....lb.						
Sulfate, 10 lb tins.....lb.						
Nitre Cake, bulk.....ton						
Nitrobenzene, redistilled, 1000 lb drs wks.....lb.						
Nitrocellulose, c-l-l-cl, wks.....lb.						
Nitrogenous Material, bulk unit						
Nitronaphthalene, 550 lb bbls lb.						
Nitrotoluene, 1000 lb drs wks lb.						
Nutzgalls Aleppy, bags.....lb.						
Chinese, bags.....lb.						
Oak Bark, ground.....ton						
Whole.....ton						
Orange-Mineral, 1100 lb casks NY.....lb.						
Orthoaminophenol, 50 lb kgs.....lb.						
Orthoanisidine, 100 lb drs.....lb.						
Orthochlorophenol, drums.....lb.						
Orthoresol, drums.....lb.						
Orthodichlorobenzene, 1000 lb drums.....lb.						
Orthonitrochlorobenzene, 1200 lb drs wks.....lb.						
Orthonitrotoluene, 1000 lb drs wk.....lb.						
Orthonitrophenol, 350 lb dr.....lb.						
Orthotoluidine, 350 lb bbl 10-1 lb.						

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Acetate of Soda

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Benzol

Whiting

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We are specialists in fractionating narrow distillation ranges, in developing special cuts of Naphthas, special grades of Lacquer Diluents, special products for special purposes. Manufacturers haven't begun to tap the tremendous possibilities of petroleum Naphthas. Until they do, they're passing up the biggest opportunity for swift development they've ever had. We want a chance to unfold some of these possibilities for *your* benefit.

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Chicago

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New York

3520 W. 140th Street
Cleveland, O.

Chemical Solvents Co., 110 E. 42nd Street
New York

Purchasing Power of the Dollar: 1926 Average—\$1.00 - 1929 Average \$1.039 - Jan. 1929 \$1.026 - Sept. 1930 \$1.193

quantities. The best demand is for the dark shades.

Phosphate Rock — Shipments and spot sales were small during the month. Producers are rigidly adhering to list prices.

Phthalic Anhydride — In a competitive market this commodity touched 15c for large quantities.

Potash Caustic — Recent rumors of lower prices failed to materialize and sales were being made at established price levels. Demand is reported as fair.

Potassium Bichromate — Tanners have speeded up production and shipments into this consuming field have consequently shown some improvement over the summer months. 1931 contract prices have not been announced.

Potassium Carbonate — Imports for first seven months of 1930 amounted to 11,468,391 lbs. against 13,635,237 lbs. in the same period a year ago. Prices are firm with only routine interest from consumers.

Potassium Chlorate — Match manufacturers were but mildly interested and the market was dull at unchanged prices. Imports for seven months amounts to 9,375,591 lbs. against 8,119,334 lbs. a year ago.

Potassium Permanganate — Greater activity was reported from several consuming channels. Prices remain steady and unaltered.

Potassium Prussiate — Both yellow and red grades are in good demand. Manufacturers are adhering strictly to present price range.

Quebracho — Importations from the Argentine have served to increase present stocks and unsettle the market slightly.

Resorcinol — Technical was reduced 10c a lb. on September 15 bringing current price level to 90c. On September 18, U. S. P. material was reduced to \$1.30, f. o. b. producing points.

Rosins — Unsettled conditions continue to rule this market and several reductions in most grades were in evidence. Buying in the primary market was better and was attributed to speculation. The total value of domestic exports naval stores for August amounted to \$2,444,840 against \$3,228,411 for August 1929 while for the first eight months of 1930 the total value amounted to \$16,382,221 as compared with \$20,829,222 a year ago.

Sal Soda — Demand for cleaning purposes was only fair but some improvement in the silk dyeing centers was noticeable. Prices are still competitive.

Salt Cake — The very strong condition of this market for the past few months has abated somewhat and producers are

1929		1928		Current Market	1930	
High	Low	High	Low		High	Low
.75	.70	.75	.70	Orthonitroparachlorphenol, tins	.70	.75
.17	.16	.17	.16	Oseage Orange, crystals.....lb.	.16	.17
.07	.07	.07	.07	51 deg. liquid.....lb.	.07	.07
.15	.14	.15	.14	Powdered, 100 lb bags.....lb.	.14	.15
.06	.04	.06	.04	Paraffin, retd, 200 lb cs slabs	.04	.04
.07	.04	.07	.04	123-127 deg. M. P.....lb.	.04	.04
.07	.06	.08	.08	128-132 deg. M. P.....lb.	.06	.06
.28	.20	.28	.20	133-137 deg. M. P.....lb.	.07	.07
1.05	1.00	1.05	1.00	Para Aldehyde, 110-55 gal drs.....lb.	.23	.23
1.30	1.25	1.30	1.25	Aminoacetanilid, 100 lb bg.....lb.	1.00	1.05
1.15	.99	1.15	1.15	Aminohydrochloride, 100 lb	1.05	1.05
.65	.50	.65	.50	kegs.....lb.	1.25	1.30
2.50	2.25	2.50	2.25	Aminophenol, 100 lb kegs.....lb.	1.25	1.02
.20	.17	.20	.17	Chlorophenol, drums.....lb.	.65	.65
.55	.50	.55	.50	Coumarone, 330 lb drums.....lb.	2.25	2.50
.55	.48	.59	.48	Cymene, retd, 110 gal dr.....gal.	.17	.20
.26	.23	.32	.32	Dichlorobenzene, 150 lb bbls	.50	.55
2.85	2.75	2.85	2.75	Nitroacetanilid, 300 lb bbls.....lb.	.48	.55
.55	.45	.55	.50	Nitroaniline, 300 lb bbls wks	.23	.26
.94	.92	.94	.92	Nitrochlorobenzene, 1200 lb drs	2.75	2.85
.31	.29	.30	.30	wks.....lb.	.45	.50
1.20	1.15	1.20	1.15	Nitro-orthotoluidine, 300 lb	.92	.94
.75	.70	.41	.40	bbls.....lb.	.29	.31
.22	.20	.22	.20	Nitrophenol 185 lb bbls.....lb.	1.15	1.20
.42	.38	.42	.40	Nitrosodimethylaniline, 120 lb	.70	.75
.27	.25	.25	.20	bbls.....lb.	.20	.22
.25	.23	.23	.17	Nitrotoluene, 350 lb bbls.....lb.	.38	.40
25	.25	Phenylenediamine, 350 lb bbls	.27	.27
.02	.02	.03	.02	Tolueneulfonamide, 175 lb	.25	.25
.16	.13	.13	.20	bbls.....lb.	Nom.	Nom.
1.35	1.35	1.35	1.35	Toluenesulfonchloride, 410 lb	.02	.02
.....	bbls wks.....lb.	.15	.15
.....	Toluidine, 350 lb bbls wk.....lb.	1.35	1.35
.....	Paris Green, Arsenic Basis	3.00	3.00
.....	100 lb kegs.....lb.	3.50	3.50
.....	250 lb kegs.....lb.	4.00	4.00
.....	Persian Berry Ext., bbls.....lb.	4.50	4.50
.....	Pentanol (see Alcohol, Amyl)...	5.00	5.00
.....	Pentanol Acetate (see Amyl Acetate)	5.50	5.50
.....	Petrolatum, Green, 300 lb bbl.....lb.	5.75	5.75
.....	Phenol, 250-100 lb cases.....lb.	6.25	6.25
.....	Phenyl Alpha-Naphthylamine,	5.00	5.00
.....	100 lb kegs.....lb.
.....	Phenylhydrazine Hydrochloride
.....lb.	2.90	3.00
.....lb.	3.00	3.00
.....lb.	3.50	3.50
.....lb.	4.00	4.00
.....lb.	4.50	4.50
.....lb.	5.00	5.00
.....lb.	5.50	5.50
.....lb.	6.00	6.00
.....lb.	6.50	6.50
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.....lb.	68.00	68.00
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.....lb.	69.50	69.50
.....lb.	70.00	70.00
.....lb.	70.50	70.50
.....lb.	71.00	71.00
.....lb.	71.50	71.50
.....lb.	72.00	72.00
.....lb.	72.50	72

Oxalic Acid Chlorate Soda Phosphorous Compounds

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freely offering material at prices \$2 @ \$2.50 a ton lower. Some increase in production has been made.

Sesame Oil — Small spot stocks prevented the market from showing any weakness with sales only fair.

Shellac — Prices held better during September than in any month this year. While some shading of prices were reported the general tone of the market was much improved and no general reductions were in evidence. Consumers are coming into the market in increasing numbers indicating that stocks in users' hands are now nearly exhausted and are being replenished.

Soda Ash — Consumption has been slowly improving during the past month. Rumors were about that producers were soliciting 1931 contracts on present scale of prices but this could not be confirmed. Most consumers report that no effort as yet has been made to negotiate as yet next year's business. Exports for first seven months of the year totals 43,502,150 lbs. as against 41,000,873 lbs. a year ago.

Soda Caustic — Despite considerable improvement in tonnages moving into consuming channels the market assumed a rather competitive position. Buyers however are covering only immediate requirements on spot purchases. No definite announcement has been forthcoming from leading producers as to the trend of prices for the contract season. Exports in first seven months amounted to 77,917,830 lbs. against 75,958,841 lbs. a year ago.

Sodium Bicarbonate — Shipments are said to be in fair volume. Spot business was only routine but was being done at schedule prices.

Sodium Bichromate — Producers report better demand from the tanning trades and an increase in tonnages going to the paint and dry color field. Shipments for the first eight months of 1930 compare very favorably with 1928 but are slightly below last year. The new prices for 1931 contracts have not as yet been announced.

Sodium Cyanide — The plating and case-hardening industries are still curtailing production. Shipments are fair and prices firm. Imports for first seven months of 1930 total 16,642,118 lbs. against 22,656,286 lbs. a year ago.

Sodium Nitrate — Spot sales are encouraging. Buyers are covering only immediate requirements pending final announcement of contract prices. With some political unrest prevailing in Chile interest centered in the probable effect on the new "Cosana" and the agreement with synthetic producers. Production in

1929		1928			Current Market		1930	
High	Low	High	Low		High	Low	High	Low
.17	.14	.17	.16	Binoxiate, 300 lb bbls.....lb.	.14	.17	.17	.14
.30	.30	.30	.30	Bisulfate, 100 lb kegs.....lb.	.30	.30	.30	.30
.05½	.05½	.05½	.05½	Carbonate, 80-85% calc. 800 lb casks.....lb.	.05½	.05½	.05½	.05½
.09	.08½	.09	.08½	Chlorate crystals, powder 112 lb keg wks.....lb.	.08	.08½	.09	.08
.05½	.05½	.05½	.05½	Chloride, crys bbls.....lb.	.05½	.06	.06	.05½
.28	.23	.28	.27	Chromate, kegs.....lb.	.23	.28	.28	.23
.57½	.55	.57½	.55	Cyanide, 110 lb. cases.....lb.	.55	.57½	.57½	.55
.13	.11½	.12	.11½	Metabisulfite, 300 lb. bbl.....lb.	.12	.13	.13	.12
.24	.16	.17	.16	Oxalate, bbls.....lb.	.20	.24	.24	.20
.12	.11	.12	.11	Perchlorate, casks wks.....lb.	.11	.12	.12	.11
.16½	.16	.15½	.15	Permanganate, USP, crys 500 & 100 lb drs wks.....lb.	.16	.16½	.16½	.16
.40	.38	.38	.37	Prussiate, red, 112 lb keg.....lb.	.38	.40	.40	.38
.21	.18½	.18½	.18	Yellow, 500 lb casks.....lb.	.18½	.21	.21	.18½
.51	.51	.51	.51	Tartrate Neut, 100 lb keg.....lb.	.21	.21	.21	.21
.25	.21	.25	.25	Titanium Oxalate, 200 lb bbls.....lb.	.21	.23	.23	.21
5.00	5.00	..	..	Propyl Furoate, 1 lb tins.....lb.	5.00	5.00	5.00	5.00
.05	.04	.05	.04	Pumice Stone, lump bags.....lb.	.04	.05	.05	.04
.06	.04½	.06	.04½	250 lb bbls.....lb.	.04½	.06	.06	.04½
.03	.02½	.03	.02½	Powdered, 350 lb bags.....lb.	.02½	.03	.03	.02½
.03½	.03½	.03½	.03½	Putty, commercial, tubs.....lb.	.03½	.03½	.03½	.03½
.05½	.05½	.05½	.05½	Linseed Oil, kegs.....lb.	.05½	.05½	.05½	.05½
1.75	1.50	1.50	1.50	Pyridine, 50 gal drums.....gal.	1.50	1.75	1.75	1.50
.13½	.13	.13	.13	Pyrites, Spanish cif Atlantic ports bulk.....unit	.13	.13½	.13½	.13
.04	.03	.04	.03	Quebracho, 35% liquid tks.....lb.	.03	.04	.04	.03
.04½	.03½	.04	.03½	450 lb bbls c-1.....lb.	.03½	.03½	.03½	.03½
.04½	.05½	.05	.04	35% Bleaching, 450 lb bbl.....lb.	.04½	.05½	.04½	.05½
.05½	.05½	.05	.05	Solid, 63%, 100 lb bales cif.....lb.	.05	.05½	.05½	.05
.05½	.05½	.05	.05	Clarified, 64%, bales.....lb.	.05½	.05½	.05½	.05½
.06	.05½	.06	.05½	Quercitron, 51 deg liquid 450 lb bbls.....lb.	.05½	.06	.06	.05½
.13	.10	.13	.10	Solid, 100 lb boxes.....lb.	.10	.13	.13	.10
14.00	14.00	14.00	14.00	Bark, Rough.....ton	14.00	14.00	14.00	14.00
35.00	34.00	35.00	34.00	Ground.....ton	34.00	35.00	35.00	34.00
.46	.44	.46	.45	R Salt, 250 lb bbls wks.....lb.	.40	.44	.45	.40
.18	.18	..	..	Red Sanders Wood, grd bbls.....lb.	.18	.18	.18	.18
1.25	1.15	1.35	1.25	Resorcinol Tech, cans.....lb.	.90	1.25	1.25	.90
.62	.57	.57	.57	Rosin Oil, 50 gal bbls, first run.....gal.	.57	.58	.58	.57
.64	.60	.62	.62	Second run.....gal.	.60	.61	.61	.60

Rosin

1929		1928			Current Market		1930	
High	Low	High	Low		High	Low	High	Low
9.25	7.45	9.75	8.20	Rosins 600 lb bbls 280 lb...unit				
9.25	7.70	9.80	8.25	B.....	5.65	7.75	5.65	
9.27	8.30	9.95	8.60	D.....	5.65	8.00	5.65	
9.27	8.40	10.10	8.65	E.....	5.67½	8.17	5.67½	
9.45	8.40	10.10	8.75	F.....	5.67½	8.45	5.67½	
9.50	8.40	10.10	8.75	G.....	5.70	8.45	5.70	
9.50	8.40	10.15	8.80	H.....	5.70	8.55	5.70	
9.55	8.45	10.15	8.85	I.....	5.72½	8.58	5.72½	
9.85	8.50	10.30	8.85	K.....	5.72½	8.65	5.72½	
10.30	8.93	11.00	9.15	M.....	5.80	8.80	5.80	
11.30	9.00	11.65	10.15	N.....	6.05	8.95	6.05	
12.30	9.30	12.65	10.40	WG.....	6.85	9.25	6.85	
30.00	24.00	30.00	24.00	WW.....	7.85	9.85	7.85	
.08	.05	.08	.07	Rotten Stone, bags mines.....ton	24.00	20.00	30.00	18.00
.12	.09	.12	.09	Lump, imported, bbls.....lb.	.05	.07	.07	.05
.05	.02	.05	.02	Selected bbls.....lb.	.09	.12	.12	.09
.05	.04½	.05	.04½	Powdered, bbls.....lb.	.02	.05	.05	.02
1.00	1.00	..	..	Sago Flour, 150 lb bags.....lb.	.04½	.05	.05	.04½
24.00	19.00	20.00	19.00	Sal Soda, bbls wks.....100 lb.	1.00	1.00	1.00	1.00
21.00	12.00	17.00	15.00	Salt Cake, 94-96% c-1 wks.....ton	17.75	19.00	24.00	17.75
.06½	.06½	.06½	.06½	Chrome.....ton	16.00	17.00	25.00	16.00
.01½	.01½	.01½	.01½	Saltpetre, double retd granular 450-500 lb bbls.....lb.	.06½	.06½	.06½	.06½
.61	.47	.62½	.49	Satin, White, 500 lb bbls.....lb.	.01½	.01½	.01½	.01½
.45	.40	.55	.45	Shellac Bone dry bbls.....lb.	.29	.33	.47	.28
.47	.39	.58	.47	Garnet, bags.....lb.	.25	.28	.40	.25
.44	.36	.55	.42	Superfine, bags.....lb.	.24	.29	.39	.24
.57	.53	.57	.53	T. N. bags.....lb.	.22	.26	.34	.22
11.00	8.00	11.00	8.00	Schaeffer's Salt, kegs.....lb.	.53	.57	.57	.53
30.00	22.00	30.00	22.00	Silica, Crude, bulk mines.....ton	8.00	11.00	11.00	8.00
32.00	32.00	..	..	Refined, floated bags.....ton	22.00	30.00	30.00	22.00
40.00	32.00	40.00	32.00	Air floated bags.....ton	32.00	32.00	32.00	32.00
..	..	..	..	Extra floated bags.....ton	32.00	40.00	40.00	32.00
22.00	15.00	22.00	15.00	Soapstone, Powdered, bags f. o. b. mines.....ton	15.00	22.00	22.00	15.00

Soda

1929		1928			Current Market		1930	
High	Low	High	Low		High	Low	High	Low
1.40	1.40	1.40	1.40	Soda Ash, 58% dense, bags c-1 wks.....100 lb.	1.40	1.40	1.40	
1.34½	1.34½	2.29	2.40	58% light, bags.....100 lb.	1.34½	1.34½	1.34½	
1.32	1.32	1.32½	1.32½	Contract, bags c-1 wks.....100 lb.	1.32	1.32	1.32	
3.35	3.35	4.21	4.16	Soda Caustic, 76% grad & flake drums.....100 lb.	3.35	3.35	3.35	
2.95	2.95	3.91	3.76	76% solid drs.....100 lb.	2.90	2.95	2.90	
2.90	2.90	3.00	3.00	Contract, c-1 wks.....100 lb.	2.90	2.90	2.90	
.06½	.04½	.05	.04½	Sodium Acetate, tech.....450 lb. bbls wks.....lb.	.05	.05½	.05½	.04
.19	.18	..	..	Arsenate, drums.....lb.	.18	.19	.19	.18
1.50	.75	Arsenite, drums.....gal.	.75	1.00	1.00	.75
2.41	2.41	2.41	2.41	Bicarb, 400 lb bbl NY.....100 lb.	2.41	2.41	2.41	

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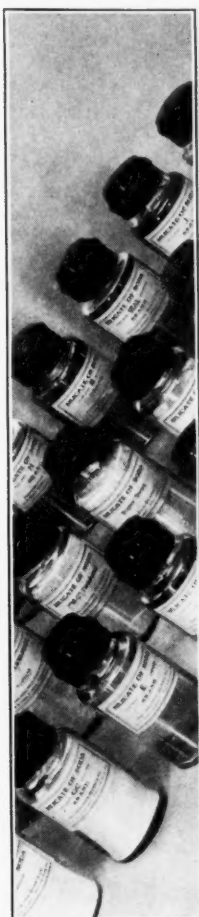
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Purchasing Power of the Dollar: 1926 Average—\$1.00 - 1929 Average \$1.039 - Jan. 1929 \$1.026 - Sept. 1930 \$1.193

July totalled 199,300 metric tons against 205,900 tons in June. Advises from abroad point to 400,000 tons sold in the present nitrate year.

Sodium Phosphate—Shipments from abroad arriving during the middle of the month tended to create unsettled conditions in the di-salt market despite a fair demand from the silk-weighting centers. It was reported that the tri-salt, imported was being offered at \$3.50-\$3.75 a cwt. in carlots. Demand for tri-sodium phosphate for cleaning purposes has been very heavy in the last thirty years.

Sodium Silicate—Contract shipments are rather heavy specially in the corrugated box trade in anticipation of the fall and Christmas trade. Prices are quite steady for spot material. Manufacturers are still marking time as far as 1931 contract prices are concerned.

Sodium Silicofluoride—Spot demand was reported as being better but consumers are limiting purchases to present needs. A rather large importation was received during the last part of the month from Holland.

Superphosphate—Demand at the minute is slow. According to Department of Commerce production during July amounted to 366,710 tons against 349,240 tons in June and 358,656 tons during July of last year. For seven months of 1930 production amounted to 2,730,429 tons as compared with 2,483,802 tons in the same period a year ago. Shipments to consumers amounted during July to 25,373 tons compared with 36,570 tons during June and 29,623 tons in July 1929. Stocks of superphosphate on July 31 totalled 1,061,554 tons against 891,670 tons at the end of June and 1,009,802 tons at the end of July a year ago.

Tankage—Producers report considerable tonnage sold ahead. Immediate sales were small but at firm prices.

Tanning Materials—Chestnut is in a strong position due to good demand and to small spot stocks in the hands of dealers. Cutch is being bought in larger quantities at firm prices while Gambier supplies are very light. With shipments from Africa arriving in an already spotty market prices towards the end of the month were somewhat easier in the Mangrove Bark Starches. Unsettled conditions in the grain markets were considered responsible for a reduction of 15c a cwt. in a few grades. This did not stimulate consumer interest to any great extent and sales and shipments continue only in a very routine way.

Tin Crystals—With tin down to a new low of 28½c the crystals were reduced ½c and are being freely offered

1929		1928		Current Market	1930	
High	Low	High	Low		High	Low
.07½	.07	.07	.06½	Bichromate, 500 lb cks wks. lb.	.07½	.07
.04	.04	.04	.04	Bisulfite, 500 lb bbl wks. lb.	.04	.04
1.35	1.30	1.35	1.30	Carb. 400 lb bbls NY. 100 lb.	2.30	2.30
.11	.06½	.06½	.05½	Chlorate, wks. lb.	.07½	.08
13.00	12.00	13.00	12.00	Chloride, technical, 100 lb.	12.00	13.00
				Cyanide, 90-98%, 100 & 250 lb drums wks. lb.	.16	.17
.20	.18	.20	.20	Fluoride, 300 lb bbls wks. lb.	.08½	.08
.09	.08½	.09	.08½	Hydroxide, 200 lb bbls f. o. b. wks. lb.	.22	.24
.24	.22	.24	.22	Hypochlorite solution, 100 lb cbs. lb.	.05	.05
.05	.05	.05	.05	Hyposulfite, tech, pea cys. 375 lb bbls wks. 100 lb.	2.50	3.00
3.05	2.50	3.05	2.65	Technical, regular crystals 375 lb bbls wks. 100 lb.	2.40	2.65
2.65	2.40	2.65	2.40	Metanilate, 150 lb bbls. lb.	.45	.45
.45	.45	.45	.45	Monohydrate, bbls. lb.	.02½	.02½
.02½	.02½	.02½	.02½	Naphthionate, 300 lb bbl. lb.	.54	.57
.57	.54	.57	.55	Nitrate, 92%, crude, 200 lb bags c-1 NY. 100 lb.	1.99	2.07
2.22½	2.09	2.45	2.12½	Nitrite, 500 lb bbls spot. lb.	.07½	.08
.08	.07½	.08½	.07½	Orthochlorotoluene, sulfonate, 175 lb bbls wks. lb.	.25	.27
.27	.25	.27	.25	Oxalate Neut, 100 lb kegs. lb.	.37	.42
.42	.37	.23	.20	Perborate, 275 lb bbls. lb.	.15	.20
.22	.18	.22	.21	Phosphate, di-sodium, tech. 310 lb bbls. 100 lb.	3.00	3.25
3.55	3.25	3.55	3.25	tri-sodium, tech, 325 lb bbls. 100 lb.	3.50	4.00
4.00	3.90	.72	.69	Picramate, 100 lb kegs. lb.	.69	.72
.72	.69	.72	.69	Prussiate, Yellow, 350 lb bbl wks. lb.	.12	.12½
.12½	.12	.12½	.12	Pyrophosphate, 100 lb keg. lb.	.15	.20
.20	.15	.14	.13½	Silicate, 60 deg 55 gal drs, wks. 100 lb.	1.65	1.65
1.65	1.65	1.45	1.20	40 deg 55 gal drs, wks. 100 lb.	.70	.80
.80	.70	1.10	.85	Silicofluoride, 450 lb bbls NY. lb.	.04	.04½
.05½	.05	.05	.05	Stannate, 100 lb drums. lb.	.34	.43
.43	.38	.49	.48½	Stearate, bbls. lb.	.25	.29
.29	.25	.29	.18	Sulfanilate, 400 lb bbls. lb.	.16	.18
.18	.16	.18	.16	Sulfate Anhyd, 550 lb bbls c-1 wks. lb.	.02½	.02½
.02½	.02½	.02½	.02½	Sulfide, 80% crystals, 440 lb bbls wks. lb.	.02½	.02½
.02½	.02½	.02½	.02½	62% solid, 650 lb drums 1c-1 wks. lb.	.03	.03½
.04	.03½	.04	.03½	Sulfite, crystals, 400 lb bbls wks. lb.	.03	.03½
.03½	.03	.03½	.03½	Sulfocyanide, bbls. lb.	.28	.35
.76	.28½	.50	.40	Tungstate, tech, crystals, kegs. lb.	.88	.88
1.40	.88	.85	.80	Solvent Naphtha, 110 gal drs wks. lb.	.35	.40
.40	.35	.40	.35	Spruce, 25% liquid, bbls. lb.	.01	.01½
.01½	.01½	.01½	.01	25% liquid, tanks wks. lb.	.01	.01
.01	.01	.01	.01	50% powd, 100 lb bag wks. lb.	.02	.02½
.02½	.02	.02½	.02	Starch, powd., 140 lb bags. 100 lb.	3.62	3.92
4.12	3.82	4.42	3.07	Pearl, 140 lb bags. 100 lb.	3.52	3.72
4.02	3.72	4.32	2.97	Potato, 200 lb bags. lb.	.05½	.06½
.06½	.05½	.06½	.05½	Imported bags. lb.	.05½	.06½
.06½	.05½	.06½	.05½	Soluble. lb.	.08	.08½
.08½	.08	.08½	.08	Rice, 200 lb bbls. lb.	.09½	.10
.10	.09½	.10	.09½	Wheat, thick bags. lb.	.06½	.07
.07	.06½	.07	.06½	Thin bags. lb.	.09½	.10
.10	.09½	.10	.09½	Srtrium carbonate, 600 lb bbls wks. lb.	.07½	.07½
.07½	.07½	.07½	.07½	Nitrate, 600 lb bbls NY. lb.	.09	.09½
.09½	.08½	.09	.08½	Peroxide, 100 lb drs. lb.	1.25	1.25
1.25	1.25	.09	.08½			
				Sulfur		
				Sulfur Brimstone, broken rock, 250 lb bag c-1. 100 lb.	2.05	2.05
2.05	2.05	2.05	2.05	Crude, f. o. b. mines. ton	18.00	19.00
19.00	18.00	19.00	18.00	Flour for dusting 99½%, 100 lb bags c-1 NY. 100 lb.	2.40	2.40
2.40	2.40	2.40	2.40	Heavy bags c-1. 100 lb.	2.50	2.50
2.50	2.50	2.50	2.50	Flowers, 100%, 155 lb bbls c-1 NY. 100 lb.	3.45	3.45
3.45	3.45	3.45	3.45	Roll, bbls 1c-1 NY. 100 lb.	2.65	2.65
2.65	2.65	2.65	2.65	Sulfur Chloride, red, 700 lb drs wks. lb.	.05	.05½
.05	.05	.05½	.05	Yellow, 700 lb drs wks. lb.	.03½	.04
.04	.03½	.04	.03½	Sulfur Dioxide, 150 lb cyl. lb.	.07	.07
.08½	.07	.08	.08	Extra, dry, 100 lb cyl. lb.	.10	.12
.19	.10	.19	.17	Sulfuryl Chloride, 600 lb dr. lb.	.10	.65
.65	.10	.65	.10	Talc, Crude, 100 lb bgs NY. ton	12.00	15.00
15.00	12.00	15.00	12.00	Refined, 100 lb bgs NY. ton	16.00	18.00
18.00	16.00	18.00	16.00	French, 220 lb bags NY. ton	18.00	22.00
25.00	18.00	35.00	30.00	Refined, white, bags. ton	35.00	40.00
45.00	35.00	45.00	38.00	Italian, 220 lb bags NY. ton	40.00	50.00
50.00	40.00	50.00	40.00	Refined, white, bags. ton	50.00	55.00
55.00	50.00	55.00	50.00	Superphosphate, 16% bulk, wks. unit	8.50	8.75
10.00	9.00			Triple bulk, wks. unit	.65	.65
4.50&10	4.00&10	10.5&10	6.5&10	Tankage Ground NY. unit	3.60&10	4.00&10
4.80&10	3.75&10	8.0&10	9.0&10	High grade f.o.b. Chicago. unit	3.60&10	3.85&10
4.80&10	4.35&10	10.0&10	6.0&10	South American cif. unit	3.70&10	4.25&10
.05½	.04½	.05	.04	Tapioca Flour, high grade bgs. lb.	.05½	.05½
.04½	.03½	.04	.03½	Medium grade, bags. lb.	.04½	.04½
.27	.26	.27	.26	Tar Acid Oil, 15%, drums. gal.	.24	.25
.30	.29	.30	.29	25% drums. gal.	.26	.28

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Purchasing Power of the Dollar: 1926 Average—\$1.00 - 1929 Average \$1.039 - Jan. 1929 \$1.026 - Sept. 1930 \$1.193

at 27-29½¢ depending upon quantity. Demand from the silk dyeing centers is of fair volume. Exports of tin compounds for first seven months of 1930 total 1,730,789 lbs. as contrasted with 1,971,433 lbs. last year.

Tin — London market closed at the turn of the month quiet but unsettled in prices, spot being freely offered at £133/-10/10. Prompt New York price closed at 29.65¢. World output for the first eight months totalled 113,379 tons compared with 122,035 tons for the same period a year ago. August output was 11,017 tons.

Tin Tetrachloride — In sympathy with the reduction in the tin market the anhydrous was reduced to 20¼¢ with fair demand from the textile centers.

Zinc — World production of zinc in August amounted to 93,185 tons compared with 92,771 tons in July and 96,303 tons in June. U. S. production was nearly 40,000 tons in August. Closing prices on slabs were 4.6¢ New York and 4.25¢ East St. Louis.

Zinc Oxide — Some slight shading was reported on imported during the first part of the month but the situation became firmer as buying interests entered the market in greater volume.

Zinc Salts — Zinc dust was reduced ¼¢ bringing the present market level down to 6½-6¾¢ for carload lots and 8¢ for less than carload spot lots. In sympathy with the lower price for zinc the sulfate was reduced ¼¢ by most producers.

OILS AND FATS

Chinawood Oil — Only spot routine sales were in evidence during the month both buyers and sellers preferring to await developments before considering large quantities. The prevailing tone is easy but prices have been fairly well maintained despite the small tonnage being moved at the current levels. Sellers are offering prompt shipments at 7¼¢ a lb. f. o. b. Pacific Coast with an advance of ¼¢ for future deliveries. Drums are offered at 9¢ but with little interest being manifested by buyers.

Cod Oil — Trading was being done on a restricted basis. Producers were offering tanked New England at 50¢ a gal. but sales were small and unimportant at this figure.

Cottonseed Oil — A brisk demand was in evidence at the close of the month for prices on futures but the spot market was dull and lifeless. Prices were irregular

1929		1928		Current Market	1930			
High	Low	High	Low		High	Low		
Terra Alba Amer. No. 1, bgs or								
1.75	1.15	1.75	1.15	bbls mills.....100lb.	1.15	1.75	1.75	1.15
2.00	1.50	2.00	1.50	No. 2 bags or bbls...100lb.	1.50	2.00	2.00	1.50
.02½	.01	.02½	.02	Imported bags.....lb.	.01½	.01½	.01½	.01½
.09½	.09	.....	.....	Tetrachlorethane, 50 gal dr.....lb.	.09	.09½	.09½	.09
.20	.20	.20	.20	Tetralene, 50 gal drs wks.....lb.	.....	.20	.20	.20
.24	.22	.24	.22	Thiocarbamilid, 170 lb bbl.....lb.	.26½	.28½	.28½	.22
.....	.....	.....	.....	Tin Bichloride, 50% soln, 100 lb	.....	.....	.....	.....
.14½	.13½	.17½	.14½	bbls wks.....lb.	.....	.12½	.12½	.12½
.38	.33	.41½	.36½	Crystals, 500 lb bbls wks.....lb.	.27	.28	.34	.27
.45	.39	.58	.48	Metal Straits NY.....lb.	.....	.38	.38	.38
.56	.42	.75	.53	Oxide, 300 lb bbls wks.....lb.	.....	.36	.42	.36
.....	.....	.....	.....	Tetrachloride, 100 lb drs wks.....lb.	.....	.....	.....	.....
.30½	.27½	.35½	.30½	.....lb.	.....	.20½	.25½	.20½
.50	.22	.40	.40	Titanium Dioxide 300 lb bbl.....lb.	.22	.....	.50	.22
.14	.07½	.14	.13½	Pigment, bbls.....lb.	.07½	.07½	.07½	.07½
.45	.45	.45	.40	Toluene, 110 gal drs.....gal.	.....	.40	.40	.40
.40	.40	.45	.35	8000 gal tank cars wks.....gal.	.....	.35	.35	.35
.94	.90	.94	.90	Toluidine, 350 lb bbls.....lb.	.90	.94	.94	.90
.32	.31	.32	.31	Mixed, 900 lb drs wks.....lb.	.31	.32	.32	.31
.95	.85	.90	.85	Toner Lithol, red, bbls.....lb.	.90	.95	.95	.90
.80	.70	.80	.70	Para, red, bbls.....lb.	.....	.80	.80	.80
1.55	1.50	1.80	1.70	Toluidine.....lb.	1.50	1.55	1.55	1.50
.36	.32	3.90	3.60	Triacetin, 50 gal drs wks.....lb.	.32	.36	.36	.32
.10½	.10	.....	.....	Trichlorethylene, 50 gal dr.....lb.	.10	.10½	.10½	.10
.60	.55	.....	.....	Triethanolamine, 50 gal drs.....lb.	.40	.42	.42	.40
.45	.33	.50	.36	Trioresyl Phosphate, drs.....lb.	.33	.45	.45	.33
.70	.58	.73	.69	Triphenyl guanidine.....lb.	.58	.60	.60	.58
.75	.60	.75	.70	Phosphate, drums.....lb.	.60	.70	.70	.60
2.00	1.75	3.00	2.50	Tripoli, 500 lb bbls.....100 lb.	.75	2.00	2.00	1.75
.65	.51½	.66½	.50½	Turpentine Spirits, bbls.....gal.	.41½	.42	.61½	.41½
.57	.49	.59	.46	Wood Steam dist. bbls.....gal.	.38	.39	.52	.38
.30	.15	.20	.18	Urea, pure, 112 lb cases.....lb.	.15	.17	.17	.15
105.00	98.00	.....	.....	Fert. grade, bags c.i.f. ton	.....	108.00	108.00	108.00
106.30	99.30	.....	.....	c. i. f. S. points.....ton	.....	109.30	109.30	109.30
55.00	42.00	76.00	55.00	Valonia Beard, 42% tannin	.....	40.00	40.00	39.50
35.00	30.00	55.00	35.00	bags.....ton	.....	25.00	27.00	25.00
43.00	35.00	64.00	45.00	Cups, 30-31% tannin.....ton	.....	30.00	32.50	30.00
2.05	2.00	2.10	1.75	Mixture, bark, bags.....ton	.....	1.80	2.05	1.75
1.00	1.00	.....	.....	Vermillion, English, kegs.....lb.	1.75	1.00	1.00	1.00
49.75	43.50	76.00	49.75	Vinyl Chloride, 16 lb cyl.....lb.	.....	41.00	47.75	40.00
.....	.....	.....	.....	Wattle Bark, bags.....ton	.....	.....	.....	.....
.06½	.06½	.06½	.05½	Extract 55%, double bags ex-	.....	.06½	.06½	.06½
1.25	1.00	1.25	1.25	dock.....lb.	.....	1.00	1.00	1.00
13.00	13.00	13.00	13.00	Whiting, 200 lb bags, c-1 wks	.....	13.00	13.00	13.00
1.35	1.35	1.35	1.35	.....100 lb.	.....	1.35	1.35	1.35
.33	.33	.32	.32	Alba, bags c-1 NY.....ton	.....	.28	.31	.28
.32	.30	.32	.30	Gilders, bags c-1 NY.....100 lb.	.....	.25	.30	.25
.38	.38	.38	.38	Xylene, 10 deg tanks wks.....gal.	.....	.37	.38	.37
.....	.....	.....	.....	Commercial, tanks wks.....gal.	.25	.....	.....	.....
.....	.....	.....	.....	Xylidine, crude.....lb.	.....	.....	.....	.....

Zinc

5.75	5.25	.05½	5.85	Zinc Ammonium Chloride powd., 400 lb bbls.....100 lb.	5.25	5.75	5.75	5.25
.11	.10½	.10	.09½	Carbonate Tech, bbls NY.....lb.	.10½	.11	.11	.10½
.06	.05½	.06	.06	Chloride Fused, 600 lb drs wks.....lb.	.05½	.06	.06	.05½
.06½	.06½	.06½	.06½	Gran., 500 lb bbls wks.....lb.	.06½	.06½	.06½	.06½
3.00	3.00	3.00	3.00	Soln 50%, tanks wks.....100 lb.	.....	3.00	3.00	3.00
.41	.40	.41	.40	Cyanide, 100 lb drums.....lb.	.38	.39	.41	.38
1.00	1.00	.....	.....	Dithiofuroate, 100 lb dr.....lb.	.....	1.00	1.00	1.00
.08½	.08½	.09	.09	Dust, 500 lb bbls c-1 wks.....lb.	.09½	.11	.11	.09½
6.45	6.45½	6.40	6.07½	Metal, high grade slabs c-1 NY.....100 lb.	.....	6.45	6.45	6.45
.07½	.07	.07½	.07	Oxide, American bags wks.....lb.	.07½	.07½	.07½	.07½
.11	.09½	.12	.10	French, 300 lb bbls wks.....lb.	.09½	.11	.11	.09½
1.25	1.25	.....	.....	Perborate, 100 lb drs.....lb.	.....	1.25	1.25	1.25
1.25	1.25	.....	.....	Peroxide, 100 lb drs.....lb.	.....	1.25	1.25	1.25
.26	.25	.....	.....	Stearate, 50 lb bbls.....lb.	.23½	.24	.26	.23½
.03½	.03	.03½	.03½	Sulfate, 400 bbl wks.....lb.	.03	.03½	.03½	.03
.32	.30	.32	.30	Sulfide, 500 lb bbls.....lb.	.30	.32	.32	.30
.30	.28	.30	.29	Sulfocarbonate, 100 lb keg.....lb.	.28	.30	.30	.28
.03	.02½	.03	.02½	Zirconium Oxide, Nat. kegs.....lb.	.02½	.03	.03	.02½
.50	.45	.50	.45	Pure kegs.....lb.	.45	.50	.50	.45
.10	.08	.10	.08	Semi-refined kegs.....lb.	.08	.10	.10	.08

Oils and Fats

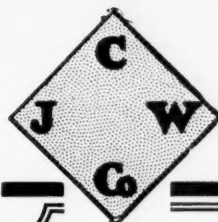
.13½	.13	.14½	.13	Castor, No. 1, 400 lb bbls.....lb.	.13	.13½	.13½	.13
.13	.12½	.14	.12½	No. 3, 400 lb bbls.....lb.	.12	.13	.13	.12½
.15	.14	.17	.14	Blown, 400 lb bbls.....lb.	.14	.15	.15	.14
.16	.14½	.17	.14	China Wood, bbls spot NY.....lb.	.09½	.10½	.13	.09½
.15	.13½	.14½	.14	Tanks, spot NY.....lb.	.09	.09½	.11	.09
.14½	.12½	.14½	.12½	Coast, tanks, Aug.....lb.	.07	.07½	.10	.07
.10½	.10½	.11½	.10	Cocoonut, edible, bbls NY.....lb.	.....	.10½	.10½	.10½
.09½	.07	.10	.09½	Ceylon, 375 lb bbls NY.....lb.	.....	.07	.08½	.07
.08	.06½	.09	.08	8000 gal tanks NY.....lb.	.06½	.06	.07	.06½
.10	.09	.10½	.09	Cochin, 375 lb bbls NY.....lb.	.07	.07½	.09½	.07
.09½	.08	.09½	.08	Tanks NY.....lb.	.....	.07	.08	.07
.09	.07	.10	.08	Manila, bbls NY.....lb.	.07½	.07	.08	.07
.08	.06½	.08	.08	Tanks NY.....lb.	.06	.06	.07	.06
.08	.06	.08	.07½	Tanks, Pacific Coast.....lb.	.05½	.06	.07	.05½

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Prices Current and Comment

Purchasing Power of the Dollar: 1926 Average—\$1.00 - 1929 Average \$1.039 - Jan. 1929 \$1.026 - Sept. 1930 \$1.193

and generally lower influenced by lower prices in other commodity markets as well as in the cotton market. Crude oil was lower, sales being made at 6¼c.

Degras — Quotations are merely nominal. No large tonnages exchanged hands during the month and inquiry for future deliveries were light. Pales range between 5¼ @ 6c, brown 4½ @ 4¾c, neutral 7¼ @ 7½c. A better demand developed for U. S. P. Lanolin and prices were steady at 14 @ 15c depending upon seller and the quantity.

Lard Oil — Better interest was in evidence during the latter part of the month and deliveries against contract were going forward in a more satisfactory manner. Stocks are still heavy and little change is looked for because of this factor.

Linseed Oil — Crushers reduced prices 2 points near the end of the month bringing the current levels down to 9.4c for tankers and 10c for barrels. Importations for the month of July amounted to 54,735 gallons.*

Menhaden Oil — Lower prices prevailed in the crude market several sales, being reported at 20 @ 21c Baltimore basis. This represents a reduction of approximately 3½c from last month. Only small lots of the refined grades changed hands during the month. The present fishing season is very promising and large stocks are expected.

Neatsfoot Oil — Moderate demand prevailed in most quarters at unchanged prices. Pure grade is held at 12c, extra 10¼c, and no. 1, 10c.

Oleo Oil — Sellers were insisting on firm prices. While spot sales were light consumers were interested in quotations on future deliveries.

Perilla Oil — Buyers appeared willing to place considerable tonnage at prices a ¼c under the market but sellers are holding out for established prices. Consequently buying was very light and limited to prompt delivery.

Rapeseed Oil — Shipments were being made for the denatured oil at 57 @ 58c a gallon in drums delivered New York. Inquiry for futures was dull.

Red Oil — Stocks in hands of actual consumers are said to be large and sales were limited but at fairly firm prices.

Stearic Acid — With the tallow and grease market unsettled buyers were insisting on concessions before placing sizable orders for future deliveries. The spot market was quite active with double-pressed being quoted at 12½c a lb., triple pressed at 14½c. Consumers under contract were absorbing a fair amount of material.

1929		1928		Current Market	1930	
High	Low	High	Low		High	Low
.64	.57½	.69	.63	Cod, Newfoundland, 50 gal bbls		
.60	.60	.63	.60	Tanks NY.....gal.	.54	.56
				Cod Liver see Chemicals.....		
.05½	.042	.06½	.05½	Copra, bags.....lb.	.039	.046
.10½	.09½	.11	.10	Corn, crude, bbls NY.....lb.	.08½	.10
.09	.07½	.10	.08½	Tanks, mills.....lb.	.06½	.07
.11½	.10½	.12½	.11½	Refined, 375 lb bbls NY.....lb.	.09½	.10½
.11	.09	.11½	.10½	Tanks.....lb.	.08	.10
.09	.08½	.09½	.07½	Cottonseed, crude, mill.....lb.	.07	.07½
.1075	.085	10.65	.09½	PSY 100 lb bbls spot.....lb.	.083	.081
.1080	.088	10.75	.09½	Aug.—Oct.....lb.	.085	.095
				Degras, American, 50 gal bbl		
.05	.03½	.05	.04½	NY.....lb.	.03½	.04½
.05½	.04½	.05½	.04½	English, brown, bbls NY.....lb.	.04½	.05
.05½	.05	.05½	.05½	Light, bbls NY.....lb.	.05	.05½
				Dog Fish, Coast Tanks.....gal.	.32	.34
Greases						
.08½	.06	.08½	.07	Greases, Brown.....lb.	.05½	.06½
.08½	.06½	.08½	.07	Yellow.....lb.	.05½	.07
.11½	.07½	.11	.09½	White, choice bbls NY.....lb.	.06½	.07
		.42½	.40	Herring, Coast, Tanks.....gal.	Nom.	
Nom.		Nom.	.09½	Horse, bbls.....lb.	.05½	Nom.
.15½	.14½	.16½	.15½	Lard Oil, edible, prime.....lb.	.12½	.13½
.13½	.12	.13½	.12	Extra, bbls.....lb.	.10	.12
.13½	.11½	.13	.11	Extra No. 1, bbls.....lb.	.09½	.11
.162	.105	10.8	10.0	Linseed, Raw, five bbl lots.....lb.	.102	.146
.158	.101	10.4	9.6	Bbls c-1 spot.....lb.	.098	.142
.15	.093	9.6	8.8	Tanks.....lb.	.092	.134
.52	.45	.48	.40	Menhaden Tanks, Baltimore.gal.	.50	.50
.09	.09	.09	.09	Blown, bbls NY.....lb.	.09	.09
.70	.70	.70	.67	Extra, bleached, bbls NY.....gal.	.70	.70
.64	.63	.64	.63	Light, pressed, bbls NY.....gal.	.63	.64
.67	.66	.67	.66	Yellow, pressed, bbls NY.....gal.	.66	.67
				Mineral Oil, white, 50 gal bbls		
.60	.40	.60	.40	Russian, gal.....gal.	.40	.60
1.00	.95	1.00	.95	Neatsfoot, CT, 20* bbls NY lb.	.16½	.17½
.19	.18½	.19	.18½	Extra, bbls NY.....lb.	.10	.11
.13½	.12	.13½	.12	Pure, bbls NY.....lb.	.12	.13½
.15½	.13½	.16½	.15½	Oleo, No. 1, bbls NY.....lb.	.10½	.12½
.11½	.10½	.17½	.11½	No. 2, bbls NY.....lb.	.09	.11
.11½	.10	.15½	.11	No. 3, bbls NY.....lb.	.09½	.10½
.10½	.09½	.14	.10	Olive, denatured, bbls NY.....gal.	.80	1.00
1.40	1.05	1.40	1.18	Edible, bbls NY.....gal.	1.75	2.00
2.00	1.95	2.00	1.75	Foots, bbls NY.....lb.	.08	.06½
.11½	.08½	.11	.09½	Palm, Kernel, Casks.....lb.	.07½	.08½
.09	.08	.09½	.08½	Lagos, 1500 lb casks.....lb.	.07	.07½
.09	.07½	.09½	.07½	Niger, Casks.....lb.	.05½	.07
.08½	.07	.08½	.07	Peanut, crude, bbls NY.....lb.	Nom.	Nom.
Nom.		.12½	.12	Refined, bbls NY.....lb.	.14½	.15
.15	.14½	.17	.14½	Perilla, bbls NY.....lb.	.10½	.14½
.20	.15	.21	.13	Tanks, Coast.....lb.	.10	.11½
.15½	.13	.15½	.10½	Poppyseed, bbls NY.....gal.	1.70	1.75
1.75	1.70	1.75	1.70	Rapeseed, blown, bbls NY.....gal.	.85	1.00
1.04	1.04	1.06	1.01	English, drms. NY.....gal.	.75	.82
.90	.82	.92	.83	Japanese, drms. NY.....gal.	.56	.58
.88	.72	.90	.81	Red, Distilled, bbls.....lb.	.09½	.10½
.11½	.10½	.10½	.09½	Tanks.....lb.	.08½	.09½
.10½	.09½	.09½	.08	Salmon, Coast, 8000 gal tks.....gal.	Nom.	.44
.44	.42	.50	.42	Sardine, Pacific Coast tks.....gal.	.35	.42
.51	.45	.50	.41	Sesame, edible, yellow, dos.....lb.	.09	.12
.12	.11½	.13½	.12	White, dos.....lb.	.10	.12½
.12½	.12½	.15	.12½	Sod, bbls NY.....gal.	.40	.40
.40	.40	.40		Soy Bean, crude.....lb.		
.10½	.09	.09½	.09	Pacific Coast, tanks.....lb.	.09	.09½
				Domestic tanks, f.o.b. mills.....lb.	.08	.08½
.10½	.08½		.12	Crude, bbls NY.....lb.	.10½	.10½
.12½	.11½	.12½	.10½	Tanks NY.....lb.	.09½	.09½
.11½	.10½	.10½	.10½	Refined, bbls NY.....lb.	.13½	.13½
.13½	.13½	.13½	.13½	Sperm, 38* CT, bleached, bbls NY.....gal.	.84	.85
.85	.84	.85	.84	45* CT, bleached, bbls NY gal.	.79	.80
.80	.79	.80	.79	Stearic Acid, double pressed dist bags.....lb.	.13½	.14
.18½	.15½	.18½	.11	Double pressed saponified bags.....lb.	.14½	.15
.19	.15½	.19	.11½	Triple, pressed dist bags.....lb.	.15½	.16
20½	.17½	.20½	.13½	Stearine, Oleo. bbls.....lb.	.08½	.08½
.12	.09½	.12½	.09½	Tallow City, extra loose.....lb.	.05½	.07
.08½	.07	.09½	.08	Edible, tierces.....lb.	.06½	.09½
.10½	.08	.10½	.09½	Tallow Oil, Bbls, c-1 NY.....lb.	.09½	.11
.12	.10½	.12½	.11½	Acidless, tanks NY.....lb.	.08½	.10
.11	.09½	.11½	.10½	Vegetable, Coast mats.....lb.	.07½	Nom.
Nom.	.08	Nom.	.08	Turkey Red, single bbls.....lb.	.11	.12
.12	.11	.11		Double, bbls.....lb.	.14	.16
.16	.14	.16	.14	Whale, bleached winter, bbls NY.....gal.	.74	.74
.80	.74	.80	.78	Extra, bleached, bbls NY.....gal.	.76	.76
.82	.76	.82	.80	Nat. winter, bbls NY.....gal.	.73	.73
.78	.73	.78	.76			

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"WE"—Editorially Speaking

D. A. Wilcox, author of "Planning for Profits", needs no introduction to *CHEMICAL MARKETS* readers. A complete resume of his business activities was given in the March number. Since Mr. Wilcox's graduation from Columbia University in 1913 his work has been along the lines of industrial and plant accountancy. In the past two years he has been engaged in introducing modern systems of budget control in two large chemical plants and in consulting work. A number of very favorable comments have reached us on Mr. Wilcox's previous articles and *CHEMICAL MARKETS* readers will find his present contribution most timely. Under present business conditions intelligent economy and strict supervision must be practiced. There are several ways of making a profit by closely watching the various small savings that can be made when production costs are definitely known. Executives in every branch of the industry will find plenty of food for thought in this article.

We are often told that, "The other fellow's grass always looks the greenest." No one can possibly read "By Comparison, Chemical Business is Good", without being convinced that the chemical industry is on a sound basis in this country and one of the most desirable to be connected with. Employing the indices of employment, payrolls, stock values, commodity prices and industrial activity of the five leading industries as a basis for comparison the chemical industry appears to be making the best showing. The automotive, textile, steel and building trades are in most cases far below the chemical field. This is indeed surprising as these four are very large consumers of industrial chemicals and seems to prove that the chemical industry is its own best customer.

For a variety of reasons our intention of using in the roto section the photos of the winners of the recent salesmen's golf tournament at Briarcliff came to nought. Eddie Orem, second low gross, sent us a beautiful studio-portrait picture entirely unlike his usual locker-room pose, Dick Noonan's best stance illustrated is still missing despite his promises of early delivery, and Bob Quinn only won fourth this time so we can't feature him. Now for the best part of the story. After repeated requests Al Alvarez, the "Bobby Jones of the Chemical Industry" had a few snapshots taken for us, sending us a

roll of film for development. When we got them back there was young Alvarez, Junior, aged five, looking very determined swinging a toy putter. The rest of the pictures were just blanks.

Dr. Hugh S. Taylor, Princeton University, is another contributor to this number who needs no introduction to our readers. In "Chemistry in the New Era", Dr. Taylor has done two things remarkably well. He briefly but thoroughly traces the growth of the chemical industry from the time of the alchemist governed by superstition to the present era of modern chemistry based solely on facts established by painstaking research. By far however, Dr. Taylor's most important contribution is a warning to the leading executives of the industry that retrenchment on research appropriations in times of depression is false and dangerous economy.

Farm Relief Plan No. 7462:—We have an inquiry for the name and address of a chemical manufacturer who is in the

COMING FEATURES

The American sulfur industry is experiencing its most prosperous year. The causes underlying this remarkable growth of the last decade is explained in "No Sulfur Shortage."

"Care and Selection of Leather Belting." Roy H. Moore of Chas. A. Schieren and Company shows the economy of leather belting in chemical plants and the best methods of maintenance.

"Ammonium Linoleate." A new chemical product that is finding wide application as an emulsifying agent by H. Bennett of the Glyco Products Company.

"Glass in Industrial Chemical Manufacturing Plants." W. E. Marshall, consulting engineer for the Corning Glass Works explains new and novel introductions of glass in large scale manufacturing.

market for an unlimited quantity of rhubarb as a raw material for the manufacture of citric acid. This is a serious offer from a truly distressed agriculturist. At least it is as practical as a number of ways in which the chemical industry is supposed to save the American farmer.

"Synthetic Weather". Many of the major processes in the chemical and allied fields to-day are using atmospheric control. Remarkable strides have been made in recent years by engineers in producing accurately the exact conditions of humidity required for satisfactory results. Such widely diversified industries as rayon, lacquer, leather and ceramics are utilizing synthetically produced weather.

While conditions to-day may appear on the surface to strongly resemble those prevailing in 1920 they are upon further investigation found to differ greatly. Chemical prices in 1930 are on a much firmer basis than they were ten years ago, stocks of both raw and finished products are not as excessive and we hear nothing to-day of sales of chemicals by buyers in financial distress, a most common occurrence a decade ago. "Chemical Prices are on a firmer Basis" places a more favorable light on an unfavorable situation.

"Doc" Stokes, Safety Director for Monsanto is a very modest chap. We are unable to give in detail all of his achievements, but his record of results obtained in preventing accidents at the Monsanto St. Louis plant speaks well for his ability.

Since our May issue when the tenth candle appeared on our birthday cake, we have been reproducing each month a page of our issue of ten years previous. On one of these pages recently was reported the payment of an extra dividend by a certain chemical company, and one of their stockholders, in most irate mood, wrote us the other day demanding to know why the company had not advised him of this extra payment made ten years ago, since they were apparently so anxious to get the publicity in our pages. We rather suspect that our very simple, timely explanation avoided an injunction against the whole of the directorate, a suit for maladministration against the management, and a personal shooting up of the treasurer's office.